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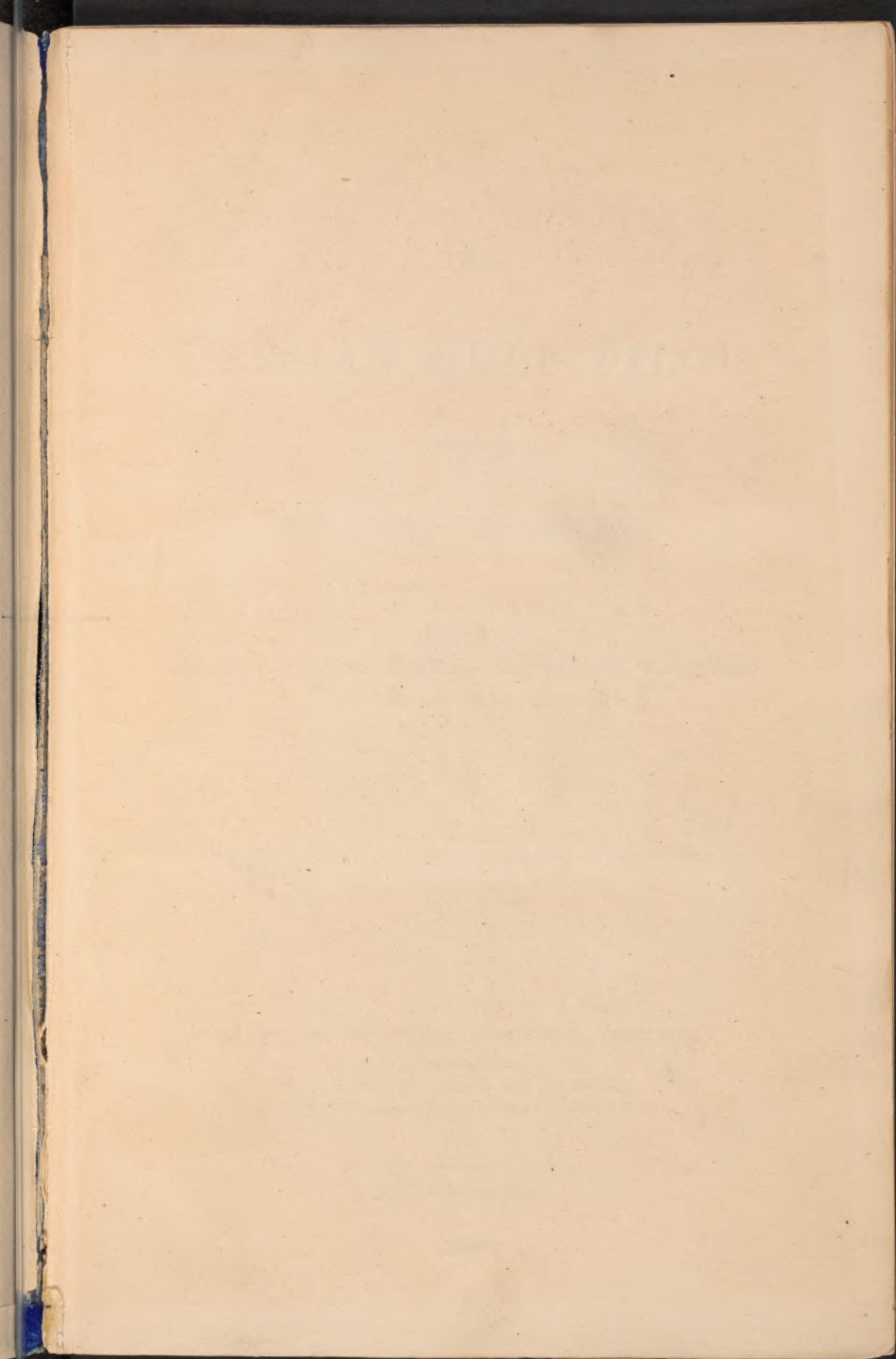
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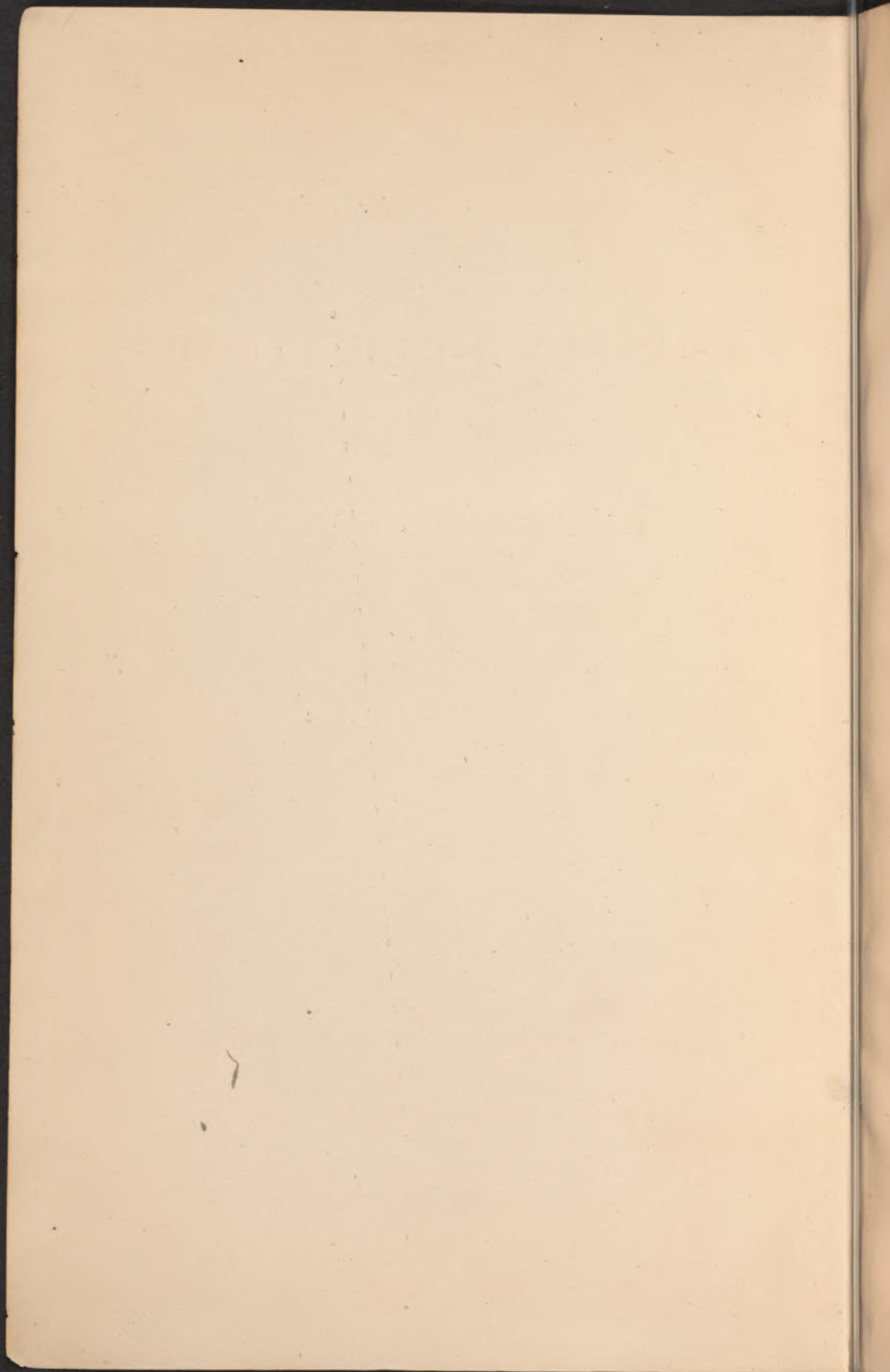
PERSIAN GULF
PILOT.



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THE
PERSIAN GULF PILOT.

INCLUDING

THE GULF OF 'OMMAN.

COMPILED BY

CAPTAIN C. G. CONSTABLE and LIEUTENANT A. W. STIFFE,
of H.M. late INDIAN NAVY.

PUBLISHED BY ORDER OF THE LORDS COMMISSIONERS OF THE ADMIRALTY.

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P R E F A C E.

THE Persian Gulf Pilot contains Sailing Directions for the Persian Gulf including the Gulf of 'Omman, and the Arabian Coast as far as Ras al Hed.

These Gulfs were surveyed by officers of the Indian Navy in 1821-8; but as there were errors in the longitudes of various places, Commander Constable and Lieutenant Stiffe, of H.M. late Indian Navy, were employed in the E.I.C. brig *Euphrates*, 1857-8, and in the schooner *Marie*, 1858-60, in revising the chart, and it is from their experience and remark books that this work has been written.

G. H. R.

Hydrographic Office, Admiralty, London,
April 1864.

1st ed.

Recd. 18 Jan 59

PREFACE

THESE PAPERS, WHICH WERE FIRST PUBLISHED IN THE
 YEAR 1857, HAVE BEEN REPRINTED IN THE
 YEAR 1887, WITH THE ADDITION OF A
 NEW INTRODUCTION, AND A CORRECTION OF
 THE ERRORS IN THE ORIGINAL TEXT.
 THE ORIGINAL TEXT WAS REPRINTED IN THE
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L. H. B.

THE UNIVERSITY OF CHICAGO, CHICAGO, ILL.
 1887.

LIST OF WORDS OF FREQUENT OCCURRENCE IN THE CHARTS AND SAILING DIRECTIONS.

<i>Arabic.</i>	<i>English.</i>	<i>Arabic.</i>	<i>English.</i>
'Aeich	A hard bank.	Khor	A creek or narrow inlet of the sea, a strait; also a deep channel between shoals.
Abú or Bú	Father of, <i>i.e.</i> , producing or abounding in, also large.	Kúh (Persian)	A mountain, or hill.
Bandar ...	A landing place, a sheltered anchorage, whether from all winds or from one quarter only.	Maragah...	A shoal with soft bottom.
Burr	Territory or country.	Najwet....	A shoal.
Báb	A narrow strait or gut, literally a door or gate.	Ras.....	A cape, also a projecting point of a reef.
Dúhet	A bay.	Rug, Rigget	Hard bank, shoal but no overfalls; not dangerous.
Fusht.....	A reef of rocks.	Sifet.....	Sandy beach.
Ghubbet ..	A deep water bay or inlet.	Shat.....	Fresh water river.
Gassár	A rock either above or below water.	Umm	Mother of, similarly used to Abú; this is often joined to the following word by omitting the u, and simply prefixing m, as Umm Gheyr contracted to Magheyr.
Hed	A spit of sand, or low sandy point.		
Hálat.....	Sand bank dry at low water.		
Jebel	A mountain, also a hill.		
Jezíret....	An island, sometimes a peninsula.		

The words al, ar, as, az, an, ad, at, which precede many of the names, are different forms of the Arabic definite article.

The letters G J and Y, also G and K are often permutable in the names used in this memoir, according to the dialect of the speaker.

COINS, WEIGHTS AND MEASURES.

The current coin in Persia is the kerán, a silver coin, of which (according to the Indian government assay) 209 are worth 100 Indian rupees (say 10*l.* sterling), or one kerán is about 11½*d.* The tomán (gold) is worth 10 keráns. Of the subordinate copper coins (guz) 50 are equal to one kerán.

There is no national Arabian coinage, the current money is the Spanish or German dollar, worth about 4*s.* 6*d.* The Government rate of exchange

is 100 dollars to 217 India rupees (21*l.* 14*s.* 0*d.* sterling) but varies from 212 to 225. The copper coins used are the "pice" of the Government of India, which pass at Maskat at a nominal value, which fluctuates according to the supply, &c.

The India rupee will, however, pass current everywhere (perhaps at a small loss). Ships should be provided with it, or be able to draw bills on Bombay, which are generally at a premium in Abú-shehr.

English gold is not known.

The standard of weight is called a maund, and varies considerably ; at Maskat a maund of 25½ lbs. is used, at Abú-shehr the common maund is 7½ lbs., and a Hashim maund 116 lbs. Every town has a different maund.

The liquid measure is the English gallon, which is understood at Abú-shehr, Basidúh, and where they are accustomed to English vessels.

Water is charged so much per cask, the price varies from 1 kerán per water cask of 50 gallons (hogshead) to 2½, according to the distance it has to be brought.

The Arabs have very vague ideas about distance ; there appears to be no Arab measure of distance corresponding to a mile or league, the only approach to it is what they call a zamm, which varies according to the ideas of the person using it. It may be from 7 to 10 miles. The Arabs give a definition to the effect that it is the distance at which a ship may be seen. Distances by land are estimated by them as so many days journey, but you must ascertain whether your informant means for a horseman or laden camel.

The Persian standard of measure is the farsang (Arabic, farsakh), it is about a nautical league, or 6,000 yards.

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TO THE SOUTH OF THE LINE OF THE EQUATOR, THE BEARINGS ARE ALL MAGNETIC
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THE DISTANCES ARE EXPRESSED IN SEA MILES OF
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THE PERSIAN GULF PILOT.

CHAPTER I.

GENERAL DESCRIPTION. WINDS AND WEATHER.

THE Gulf of Persia, called by the natives *Khalīj al Fārs*, is the large inland sea bounded on the N.E. by Persia, and on the south by Arabia; the gulf of 'Omman is the name usually given to the funnel shaped entrance included between the province of 'Omman, and the opposite coast of Mekrán.

The names Arabia and Persia are not those by which these countries are known to the inhabitants. Arabia is called by the Arabs *Jezíret al 'Arab*, and to the Persians and natives of Hindústán it is known as *Arabistán*, (country of the Arabs). Persia is probably a corruption of *Fars* (a province of that country) handed down to Europeans from the times of the Greeks, who called it *Persis*, and the name has since been applied to the whole country. The Persians call their country *Irán*, the Arabs, *Burr al 'Ajam* (the inhabitants being called by them 'Ajam). The length of the Persian Gulf in a straight line, from the coast of 'Omman to the Basra river, is about 450 miles. Within the gulf its breadth varies from 100 miles between *Ras Rekken* and *Ras Mutáf*, to 180 miles between the coast of *Laristán* and the extreme southern bight called *Subákkeh*. At its entrance it is much contracted by the projecting promontory called *Ruweīs al Jebál*, and at the narrowest part it is only 29 miles in width (between *Ras Musendom* and the nearest point of the coast opposite). Within a line drawn due east from *Ras Musendom*, it comprises an area of nearly 70,000 square miles.

The gulf of 'Omman increases in breadth from 29 miles at the point above mentioned, to its eastern end (a line from *Maskat* to the point of the *Mekrán* coast north of it may be considered the eastern limit), where

it is about 110 miles broad. From Maskat to Musendom it is about 200 miles in length. Within these limits its area is about 14,000 square miles.

The two sides of the gulf differ widely in character, the Persian coast being mountainous, generally safe to approach, and having the deep water close to it; while the Arabian coast, excepting the mountains of the Ruweis al Jebál, is exceedingly low, and fronted by reefs and shoals to a great distance from the shore, for nearly its whole length, forming the celebrated pearl banks. Ships, therefore, in passing up and down the gulf, always keep on the Persian coast, seldom standing over farther than the edge of the shoal water of the pearl banks.

The gulf of 'Omman is singularly free from danger, and has deep water almost close to both coasts, which also have high mountains within no great distance of the shore.

The NORTHERN COAST, as the Persian side may be termed, presents in its whole extent, from the delta of the Euphrates to the Mekrán coast, a series of rugged, precipitous mountain ranges, one behind the other; running generally nearly parallel to the coast, and to each other.

The mountain ranges increase in height as they recede from the sea, and no kind of vegetation can be seen on their bare, and deeply furrowed sides. Being visible at great distances, they form excellent landmarks. They are separated by wide valleys, and there is a belt of low land of varying width between them and the sea, called by the Persians the *Germisír*, or hot district.

Situated at the southern foot of these mountains, watered by no river, and its summer heat tempered by no rain; this district well merits the appellation, being, with the exception of the opposite coast, the hottest place in the world, in summer.

The small seaport towns are almost exclusively inhabited by Arabs, who originally came from the opposite coast, and formed settlements there, owing to intestine commotions in their own country, or to a spirit of enterprize.

At the larger places, an admixture of Persians is found, and the rural population is exclusively Persian; but the Persian is not a maritime nation, all the boats sailing from Persian ports being manned by Arabs.

The coast is generally uninviting and barren, except near the villages, where date groves are generally found, with a small amount of cultivation.

There are no rivers, as we understand the word; and water is generally only found in wells or reservoirs of rain water. There are no good harbours for large ships, though there are plenty of roadsteads or anchorages sheltered against one or other of the prevailing winds; though not against all.

The SOUTHERN COAST, from the river (Shat al 'Arab) to the Ruweis al Jebál, is generally of white sand, a perfect desert, having extensive tracts quite uninhabited.

Near the towns, however, there are generally date groves, more or less extensive. Water is generally scarce and bad, and obtained in shallow wells near the sea.

The south coast of the gulf of 'Omman, from the Ruweis al Jebál nearly to Maskat, is fertile and well grown with date trees. It extends in a wide plain to the foot of the mountains, and is called the Bátneh or Level coast.

The population is exclusively Arab; in the towns, they are civil to Europeans, and may be trusted; but it is not safe to land unarmed away from the towns on the mainland, on account of the Bedúin, who are occasionally met with; and who attack, for the sake of plunder, even their own more civilized countrymen (the Arabs of the towns).

The navigation of this coast, between the river and 'Omman, is seldom attempted at night; vessels should anchor at dark, if possible.

On both coasts the inhabitants are very poor, and the few supplies obtainable, are so only in small quantities. In particular, fuel (wood) is scarce; *water* only obtainable in your own *watercasks*. The stranger should bear in mind that an Arab is accustomed to drinking very bad water, and his ideas of what is good water might lead to disappointment.

The water is generally better after the winter rains, and more scarce or brackish in autumn.

The basin of the Persian Gulf is probably silting up gradually at the northern end, owing to the great amount of alluvium poured into it by the rivers there.

It does not, however, appear, from comparison with the last survey, that it is the case to anything like the extent estimated by some modern writers. We have hardly sufficient data to enable us to estimate the rate of growth of the delta with any degree of certainty.

The water of the upper part of the Persian Gulf is much saltier than that of the ocean.

SOUNDINGS.—As on the S.E. coast of Arabia; in the Adriatic, and other inland seas, the soundings in the gulf are deep, where the land near the sea is high, and where it is low, the depths are less.

In the gulf of 'Omman, the deep water on both sides is very close to the coast. Off Maskat the bed of the sea sinks rapidly to a depth of 1,000 to 2,000 fathoms; and the 100 fathom line is, on an average, in this gulf only 10 to 15 miles from the shore. The depth decreases towards the narrow entrance of the Persian Gulf, where the deepest water, which is close to Ras Musendom, is only 100 fathoms. Within the gulf the

greatest depths are 40 to 50 fathoms, decreasing to 30 and 20 towards the head; while on the pearl banks, which are about $\frac{1}{3}$ of the area of the Gulf, the depths are all under 20 fathoms. The 20-fathom line runs across the head of the gulf, about 50 miles distant from the entrances to the rivers.

The bottom, on the Persian coast, and in the deep part of the gulf, is mud; on the Pearl banks, hard sand, coral, and rock; and on the Arab coast, frequently white clay, especially north of Bahrein.

ISLANDS.—The Persian Gulf is studded with islands of various sizes; the largest are: Jezíret at Tawilah, 60 by 19, and Bahrein 27 by 9 miles; while the smallest are mere sandy islets only 100 yards across. They are commonly of volcanic origin, in part at least. There are anchorages at most of the islands, sheltered in one direction; but owing to the liability, in winter, of the wind shifting suddenly to the opposite quarter, vessels should not anchor too close; and be ready to move from what may become a dangerous lee-shore, at the first symptom of a change.

WINDS.—The navigation of the gulf in a sailing ship requires great attention. The winds, as in most inland seas, are very uncertain and blow occasionally with great force down the gulf; and in winter, also in the opposite direction. They set in without much warning.

The prevailing wind in the gulf is undoubtedly the north-wester, called by the natives Shemál. This wind blows down the gulf, changing its direction with the trend of the coast.

Thus, on the Arab coast from Koweit to Bahrein, its average direction is N. by W. to N.N.W.; on the Gutr coast N. to N.N.W.; and on the W. coast of 'Omman W.N.W.

On the Persian coast it blows N.W. by N. down as far as the angle at Jebel Dreng, veering to N.W. and W.N.W. between that and Sheikh Sho'aib. Off Kaïs the direction is about W. by N., and from Bostáneh eastward it blows from W. to S.W. by W. at the entrance of the gulf.

In the gulf of 'Omman its general direction is N.W. The shemál blows about nine months in the year in the northern half of the Persian Gulf. It blows almost incessantly during June, and part of July (called the great shemál*), seldom exceeding a moderate gale in force, and at times quite light. Its general duration is 3 days, but it may last 7 days. The worst shemáls often only last one day.

During a shemál, if after rain, the air may be clear and sky cloudless, but generally the air is so loaded with dust from the Mesopotamian deserts

* The Arabs say there are 40 days of this wind, as also 40 days extreme heat, and 40 days extreme cold. Forty has always been a favourite indefinite number with the Easterns. The Persians call the ruins of Persepolis "Chehl-Menar," the forty pillars. The Centipede they call "Chehl-paj," the forty-footed.

that a dense mist is the result. This makes the navigation very dangerous, as the land cannot be seen; the white surf on the beach is often first seen, while the land is still hidden. In the Shat al 'Aráb this is sometimes so much the case that neither bank of the river can be seen. Out of sight of land, a vessel's decks and rigging get covered with fine dust.

The air during the shemál is generally very dry and sky cloudless, but in the winter, they are sometimes attended at the commencement, by rain squalls, (often with thunder and lightning), which generally clear off during the breeze.

It veers during the 24 hours a few points, blowing more off the Persian coast, or from the northward, at night; and off the sea, or more from the westward, in the day, which a vessel should take advantage of when working against one. It sets in at any hour of the day or night, and generally suddenly.

The barometer cannot be said, as a rule, to give any warning of the approach of a shemál; if it was low before, it will begin to rise as soon as the shemál sets in, but generally not before, and continue high during the whole duration of the gale. It sometimes falls before a bad winter shemál, but rises again after the first burst of the gale. The barometer in the surveying ship, was not at all affected by one of the heaviest shemáls; either before, during, or after it. This breeze is sometimes preceded by the drying up of the dew by night, or the dampness of the air ceasing, which is a pretty sure sign.

A heavy swell from the N.W., especially in the southern part of the gulf, is often the precursor of a shemál, although such a swell sometimes occurs without any wind following it.

Some of the heaviest winter shemáls set in in fine weather, with no warning except a heavy bank in the N.W. quarter, an hour or two previously, which rolls down and gradually obscures all objects; and yet this occurs sometimes without any wind following. A ship should, however, by no means neglect such a warning.

Ships should be prepared, in winter during a S.E. gale, for a sudden shift to the N.W., especially at night, as the shemál often blows then very strong.*

The worst of the shemál is always at the beginning. It does not always extend over the whole gulf, and often lulls for a short time

* On 17th March 1820, E.I.C. brig of war *Ariel*, from the river, bound to Bú-shehr, beating against a south-easter, under double-reefed topsails. At 1h. a.m. 18th, sail was further reduced as a squall was expected from the N.W. This was scarcely accomplished when the squall burst upon them, and taking her right aft she ran through the opposing head sea, buried herself in it, and sunk about 20 miles W. by N. of Kháreg island.

There were about 90 souls on board; of these only the surgeon, boatswain, and three of the crew were saved, on a canoe which floated off the booms.

about day light. In the summer shemáls the wind rarely exceeds the force of a moderate gale (7), but in the winter they are often fresh gales (8), or at times hard gales (9). It is generally advisable to seek shelter, if possible, during the strength of a shemál, as little or no way will be made against it; the Persian coast and islands offer many suitable places of shelter.

During the winter months, south-easters, called by the natives Shurgí or Koss, alternate with the north-westerns; and, like the shemáls, follow to a certain extent the direction of the coast; they only blow strong from December to April.

The koss is generally accompanied by thick, gloomy, weather, with hard squalls, and often much rain, sometimes thunder and lightning. The atmosphere is moist, and the barometer generally low. With a falling barometer and cloudy threatening weather, a koss may be expected in the above months, but timely warning is not always to be expected, although the barometer always falls during the gale, if not before. It seldom blows more than three days, its strength is generally a moderate gale (7), but at times it blows a fresh gale (8); the strongest often only last one day. When the wind begins to veer to the southward the koss is over, and is often succeeded by a shemál, almost immediately; or it may blow hard for a short time at S. or S.W. and so die away, no shemál occurring for several days.

The wind sometimes, however, after blowing hard at S.W., chops round suddenly to N.W., when a strong shemál will follow. The notion that a koss is always followed by a shemál is not correct.

If a vessel has anchored for the koss in an anchorage open to the shemál, she should weigh immediately the koss is found to be over, as she may otherwise have to ride out a N.W. gale on a lee shore. Easterly winds are of most frequent occurrence in the southern part of the gulf.

In the winter, particularly in the southern part of the gulf, strong breezes are experienced from N.E., called Nashí; they are attended by dark cloudy weather, and generally rain. The natives make a distinction between these breezes and the koss. The barometer is not affected by this breeze, being generally high; and if so, it will fall a little when the nashí is over. There is sometimes a dense haze before a nashí, caused by the dust blown off the land. This breeze often blows 3 or 5 days, but frequently only one day: after the first day the air becomes clearer, possibly owing to rain on the land. The nashí blows in gusts with frequent lulls, and if a three day gale, is strongest on the third day. The nashí blows very strong in the gulf of 'Omman, and is much dreaded by native craft, as the Bátneh coast is a lee-shore, and there is no shelter.

The south-wester, called by the natives Sabeílí, is much feared by them, as it blows into nearly all the sheltered anchorages on the Persian coast. It

lasts, generally, only a few hours; and often follows the koss, but sometimes occurs after fine weather; it is accompanied by rain, and is preceded by masses of clouds rising from the south, with lightning. It is not of frequent occurrence, and only happens in the winter months. It blows all over the gulf, and also in the gulf of 'Omman, especially off Ras al Kúh.

Squalls.—At the change of the seasons in autumn, very severe squalls may be expected, called by the Arabs *Leheymah*; it does not appear that the direction of these squalls is fixed.

The period assigned to them by the Arabs is from the 15th of October to the 5th November, during which time no native vessels put to sea,* until either the squall is over, or until the 5th November is past, if no bad weather happens before that date. If they do not occur before the 5th of November, the Arabs consider that none will happen after that date, until the ordinary bad weather of the winter sets in.† An unusual degree of electrical action is observable during this period; St. Elmo's Fire has been observed on board ship at this season. The air is often wonderfully clear about the time of these squalls.

In Basidúh roads very violent squalls have been experienced from the north in May;‡ and from the S.E. in July;§ but these are not of frequent occurrence. Very heavy squalls from the northward have been experienced in May in the north end of the gulf. In the winter, especially, tremendous gusts blow out of the great valley in the mountains below Maskat, known as the Devil's gap.

Alternating Winds.—A succession of squalls from opposite quarters, each lasting only a few minutes, and alternating thus several times, is occasionally experienced.

Land and Sea Breezes.—These are very uncertain. In fine weather very decided land winds are experienced, but only near the coast.

Sea breezes are very regular at Bú-shehr in the summer, setting in

* October 28th, 1846, E.I.C. surveying brig *Palinurus* found 35 baghalahs at anchor in Khor Jerámeh (Ras al Hed), which had put in there to wait till this dreaded period was past.

† November 11th, 1843, E.I.C. sloop of war *Coote* at anchor on the north side of the island Sir Abú Neir. S.E. gale blowing for one day and night. Dark cloudy weather with lightning. Then a violent squall from S.S.W., which, striking the ship on the starboard beam, heeled her over about three streaks (the top gallant yards and masts were down). This was followed by light variable winds from westward.

‡ May 27th 1851. Heavy squalls from the northward, with vivid lightning. At 9 p.m. E.I.C. schooner *Tigris* drove with two anchors ahead until she struck off the hospital. The beacon, the flag-staff, and many date trees blown down.

§ July 29th, 1857. Threatening appearance in the evening. At 11 p.m., heavy squalls from S.E. with lightning. Rain so heavy that it filled the reservoirs in three hours. Midnight, blowing fresh from N.W.

at 9 a.m., (when there is not a shemál), but land winds are very slight and of short duration there.

At Basídúh.—The land winds are strong and last till 10 a.m.; sea breezes are also regular, but do not set in so early as at Bú-shehr.

On the Arabian coast the land winds are often strong in the morning, and come off occasionally in hot gusts. At Koweït, the sea breezes are regular, in fine weather.

Gulf of 'Omman.—The S.W. monsoon is not felt inside Ras al Hed; as soon as that cape bears South the wind is quite lost, (the same occurs at Cape Guardafui). During the N.E. monsoon, nashís and shemáls prevail: but in the summer, or during the S.W. monsoon, no shemáls occur. Calms and light winds prevail, or light south-easterly winds, rendering the passage out of the gulf in a sailing ship very tedious.

General Observation.—Especially in the winter, the winds are often very local, a shemál blowing at one end of the gulf, while at the other end, or even in the centre part, it is blowing in the opposite direction or is calm.

At Bú-shehr the wind is often blowing the opposite way to what it is in the Shat-al-'Arab.

WEATHER.—The climate of the Persian Gulf is one of the most trying imaginable; though, perhaps, on the whole, not unhealthy for Europeans. The intense heat of the summer is aggravated by the humidity of the atmosphere, and the dust raised by every wind; nor are there rains or clouds at this season, as in India, to temper the excessive heat. The Arab coast is hotter and less healthy than the Persian, and the southern end of the gulf hotter than the northern.

In the winter the winds are cold and cutting, although the temperature is more suited to Europeans; but it appears to be less healthy than the hot season.

During June and the first half of July, the heat at the northern end of the gulf is moderated by the almost constant shemál (the air during these months is generally loaded with dust), but from that time to the end of August, it is most intense, and with a southerly wind, almost insupportable, from the increase of moisture in the air. In the month of August, the thermometer has been known to rise on shore to 150° Fahrenheit in the sun. In the shade on board ship, its range is small, from 90° to 93° at 4 a.m. to 96° or 98° in the afternoon at Bú-shehr. At Basídúh it is a little higher. In the Shat al 'Arab, the thermometer is stated by Loftus to have risen to 124° in the shade. The intense heat of the nights renders the weather more distressing. September is but little cooler than August; the nights however are less oppressive, particularly towards the end. The heat of these months is necessary for the maturing of the date crop. October, though still hot, is by comparison quite endurable; towards the end the squalls which generally occur, reduce the temperature considerably.

November is generally a beautiful month; fine weather, with often wonderfully clear atmosphere; temperature pleasant.

December is often a fine, cool month, similar to the last, unless the bad weather sets in, which it seldom does before the middle of this month. It more frequently comes on at the end of this, or the beginning of the next month, and occasionally does not set in till near the end of January.

January and February are cold and boisterous months. Gales of wind prevail, with rain, and what is termed by seamen "bad weather." The minimum of temperature occurs in the first half of February. March is an agreeable month as to temperature, and the weather generally fine and clear, the winds variable. The natives consider the bad weather over in the beginning of this month for the south end of the gulf. In the northern part of the gulf, a gale often occurs about the equinox, but intervals of variable winds and fine weather are frequent (though some bad weather still occurs).

April is a pleasant month, though getting hot towards the end. The weather is generally fine, with moderate shemáls now and then. In the northern part of the gulf a very heavy shemál has occurred in this month, also heavy squalls, or a gale from the eastward. Variable winds, however, prevail, with sometimes rain.

There is seldom any bad weather after the middle of this month.

May.—The weather getting hot in this month. It is generally fine, moderate shemáls frequent; bad squalls have been experienced, but are exceptional.

TABLE showing average range of Fahrenheit's thermometer in each month, on board ship, from observations extending over 4 years. On shore the range would be more considerable. As the observations were spread over the whole sea, the temperature in the northern half would be some degrees lower, and in the southern, higher, than this average.

Month.	Average Maximum 4 P.M.	Average Minimum 4 A.M.	Month.	Average Maximum 4 P.M.	Average Minimum 4 A.M.
January - -	69	65	July - -	91½	89
February - -	67	63	August - -	94	89
March - -	75	69½	September - -	90	83½
April - -	80½	75	October - -	85½	81
May - -	85	81	November - -	80½	76
June - -	89½	85	December - -	74	70

Lowest temperature observed 45° in February.

Highest do. do. 100° in August.

By an extract from the log of E.I.C.S. *Psyche*, on February 21, 1825, near Koweit, the thermometer during a shemál fell to 35°.

Calms are frequent in the Persian Gulf and gulf of 'Omman, sometimes lasting for days. The saying of our seamen, that "there is always either too much wind or none at all in the gulf," is very true; moderate steady breezes are almost unknown.

Water spouts, or sand spouts on shore, have been frequently observed.

The RAIN FALL is small and variable; it may average 6 inches, or from that to 8, in the year. This is at Bú-shehr, where alone it has been approximately registered. On the Arab coast it is probably less. With rare exceptions* it falls only in the winter months. On the coast of the southern bay of the gulf the rain is said to fall very rarely.

DEW.—The dews are very heavy, particularly in the summer months, when the sails appear in the morning as if a heavy shower had fallen.

FOGS.—Dense fogs, wetting everything like rain, occur at times near the coast, and always in the morning. They only last a few hours.

BAROMETER.—The range of the barometer is not great, compared with more northern latitudes, although greater than in the Indian ocean.

In winter the utmost variation is 0·6 inches, the height ranging between 29·70 and 30·30; average about 30·00. In summer there is a remarkable permanent depression of the mercury. It begins to fall about the beginning of May, and during June, July, and August stands with little variation at about 29·55, varying between 29·45 and 29·65; by the end of September it again stands at its average of about 30·00.

The diurnal variation of the barometer is somewhat peculiar; there is only one maximum, at 10 a.m., and one minimum, at 4 p.m., from which time it rises gradually till 10 the next morning; the depression which should occur at 4 a.m. being hardly perceptible. The barometer is not a safe guide as a warning against bad weather in the gulf, the worst weather sometimes occurring without any change in the mercury column, or the change not occurring till the gale has set in.

CURRENTS.—The greater part of the currents supposed to exist in the gulf are probably tides; a vessel crossing the gulf in 6 or 18 hours, would of course attribute the error in her position to a current. Currents, which are always very weak, are probably confined to the northern end of the gulf, where the tides are less strong than near the entrance, and during a north-wester or south-easter, are replaced by a slight current setting with the wind; after the strength of the north-wester is over a slight counter current may be experienced.

McCluer states, and others have repeated after him, that on the 4th day of a shemál, a current will be found setting 1 knot per hour against

* At Basidúh a very heavy fall of rain took place in July 1857.

the wind, so that a vessel will be able to make good way to windward; but this statement requires further corroboration, at any rate before asserting it as an invariable occurrence.

On the Bâtneh coast, particularly near Maskat, where the tide stream is imperceptible, there is, during the summer months (when the S.W. monsoon prevails outside), a set towards the N.W. not exceeding 1 knot per hour. Ships coming out of the gulf should not then attempt to work down close to this coast. During the winter months, when north-westerly winds prevail in the gulf, there is an almost continual set from $\frac{1}{2}$ to 1 knot per hour or even more to the south-eastward, so that a ship would find it very difficult to beat up to Muskat, near the coast.*

The **TIDES** have been hitherto scarcely at all attended to, and even now not very much is known about them. They are complicated, owing to the contracted and winding entrance of the gulf, and the many islands and shoals in it. The rise and fall at springs varies in different parts between 6 and 10 feet, while at neaps it is only from 1 to 4 feet. At neaps the rise above L.W. springs is from 3 to 7 feet. The day and night tides are very unequal; in the winter the night, and in the summer the day tide, is the superior, while the second tide in either case is quite insignificant. The rise and fall is affected by the winds, as is the general level of the sea, to the extent of a foot or more; the shemál lowering the general level of the gulf, and the south-easterly raising it; so that in the first case, the tides will appear not to rise so high and to fall lower than usual, and the reverse in the second case.†

The highest tides occur about the August springs, which may be attributed to the heaping up (during June, July, and August) of the water of the Arabian sea on its northern coast, due to the S.W. monsoon.

The tide wave takes about one hour in its passage from Maskat to the entrance of the gulf, and thence about 13 hours more to the head of the gulf. The tide hour, or time of high water at full and change, at Maskat is about $9\frac{1}{4}$ hours; at Cape Musendom at 9 h. 45 m.; at Basídúh, 12 hours; at Kaïs $12\frac{1}{2}$ hours; at Capes Náband and Rekken about five hours; at Bú-shehr $7\frac{1}{2}$ hours, and at the bar of the Shat al 'Arab 12 hours. Its progress in the deep water of the sea of 'Omman being much faster than in the shoaler water of the gulf.

The tide stream appears at first sight very anomalous, especially at

* These remarks on the currents are written with a full knowledge of the Wind and Current Charts published in 1856 by the E.I.C., from which they differ widely.

† The E.I.C. sloop of war *Coote* was aground in February 1829, for seven days on the Yárem shoal during north-west winds, and all attempts to get her off failed, till a southerly wind brought in a higher tide.

the southern end of the gulf, owing to the turning of the stream being by no means coincident with the time of high and low water.

In the gulf of 'Omman, on the Bâtneh coast, and outside Ras Jáshk the tide stream is almost imperceptible, though the rise and fall is 6 to 8 feet. In proportion as the sea narrows towards its junction with the Persian Gulf, the stream begins to be felt, and is strong off Ras al Kúh, and in the part extending in a north and south direction beyond that cape. It increases as the breadth of the sea diminishes, attaining its greatest velocity at the sharp turn at Ras Musendom, where it runs about 4 knots, and perhaps more at springs, with strong eddies and races near that cape, and between it and the islands Sellámeh, rendering a sailing vessel almost unmanageable. On the coast opposite, it is not so strong, perhaps 2 or 3 knots off Grú.

Here the peculiarity of the tide stream alluded to above is very marked, the stream running on three hours each way after the turn of the tide as shown by the gauge. This is always more or less the case where the tide has to enter a basin through a narrow entrance. This is also probably the case to some extent at Ras al Kúh although there it is not authenticated by observations.

The stream of flood (the ebb everywhere appears to run in about the opposite direction to the flood) then sets over towards the Persian coast, and to the westward along both sides of Lárek, Hormúz, and Jezíret at Tawíláh at a rate of 2 to 3 knots an hour, also to the south-westward along the coast of 'Omman, but weaker, being 1 to 2 knots per hour.

At the islands called Tumb the stream runs 3 knots on the springs, nearly east and west, and here also runs three hours after high water.

In its progress through the straits to the northward of Jezíret at Tawíláh, the tide stream is so much retarded, that it does not arrive at Basídúh till one hour before high water, so that it has always been considered to be the stream of ebb; it being supposed that the flood tide set in at both ends of the straits, meeting somewhere at Laft; which is certainly not the case, according to our observation: the entrance to Basídúh being from the west, and the in-going current corresponding so nearly with the time of the rising tide, there is a certain convenience, in continuing to call it the flood.

The tide runs also strong through the chain of islands south of Ras Bostáneh, owing to the contraction of the waterway by them, and the projecting cape. At Kaís it is much weaker, 1 to 2 knots; the stream still being three hours behind the tide.

The tide wave reaches Capes Rekken and Nábend at about the same time, and here is much weaker; the waterway being so much greater, and clear of obstruction, it does not probably exceed 1 knot per hour.

From Ras Rekken it sets to the southward on both sides of the Gutr coast at 1 and $1\frac{1}{2}$ knots per hour; and also from the eastward through and over the reefs south of Al Bid'a, meeting the tide which sets along shore from Abú Thabí to the west, somewhere south of Khor al 'Adeid. They are generally weak in this south bay, except locally.

The flood sets to the southward along both shores of Bahreïn island, and is strongly felt through the great reefs north of it. It also sets to the southward off Katíf, where it runs about 2 knots per hour.

North of the Fusht al Yárem the stream sets east and west, about 1 knot an hour across the pearl banks, often throwing a vessel out of her reckoning in making Bahreïn. It also sets about east and west through the islands near Farsí.

It runs with increased strength at the corner formed by Ras Mutáf, where the water is much discoloured; thence to Bú-shehr, and on the Arab coast opposite, the tides are weak.

At Kháreg, tides of 1 to 2 knots are experienced, setting N.W. and S.E.; and the strength increases as the rivers are approached. In the northern part of the gulf there is much less difference between the time of the turn of stream and high or low water. At the islands near Kúbbr, the tide sets 1 to $1\frac{1}{2}$ knots about N.W. and S.E.; the flood also sets up along the Persian shore to Deïlim, and thence W.S.W. to Ras Barkán. In the rivers the tide stream runs with considerable velocity, ordinarily 3 or 4 knots at springs, but when the snow melts on the mountains of Kúrdistán, the ebb attains a velocity of 5 knots, while the flood is much weaker. The stream of ebb runs 8 hours, and the flood only 4 or 5; and here again the stream runs on some time after the turn of tide.

The tide wave occupies about 6 hours in its passage from the bar to Basrah or M'akíl.

The Arab pilots say there are four fathoms at H.W. on the bar of the river twice in the year, (at other springs only $3\frac{1}{2}$), viz., in June, when the snow melts up country; and in October, the cause of which latter is somewhat doubtful.

WAVES.—The sea quickly gets up, and is short and hollow. At the entrance of the gulf, when the tide runs strong against a heavy shemál, the sea is particularly distressing, breaking very heavily; it very soon subsides after a gale. It is often out of all proportion to the amount of wind experienced, and sometimes a high swell rolls for several hours, without any wind either preceding or following it. Such a swell is generally, however, the forerunner of a gale.

During a heavy shemál there is a very high sea off Maskat. The swell of the south-west monsoon rolls round Ras al Hed, and is felt off Maskat, and slightly, even near the entrance of the gulf.

The **VARIATION** of the compass is westerly, and ranges from $\frac{3}{4}^{\circ}$ to 2° . The lines of equal variation run about N.N.W. and S.S.E. It has much decreased since the earliest recorded observations, as will be seen by the following table, and is still decreasing slightly.

Position.	West.	Date.	Authority.
Maskat - - -	10 30	—	General Coasting Pilot, by Nathaniel Cutler; London, 1728.
" - - -	6 0	1785	Lieut. John McCluer, I.N.
" - - -	2 7	1824	Capt. W. F. W. Owen, R.N.
" - - -	0 50	1849	Lieut. A. M. Grieve, I.N.
" - - -	0 40	1858	Com. Constable.
Basídúh - - -	5 0	1822	Lieut. J. H. Grubb, I.N.
" - - -	2 20	1835	Com. S. B. Haines, I.N.
" - - -	0 35	1857	Com. Constable.
Bú-shehr - - -	7 30	1765	Niebuhr.
" - - -	7 15	1786	Lieut. J. McCluer.
" - - -	4 12	1827	Lieut. G. B. Brucks, I.N.
" - - -	1 15	1857	Com. Constable.
Koweit - - -	8 30	1794	Lieut. P. Maughan, I.N.
" - - -	5 22	1824	Lieut. J. M. Guy, I.N.
" - - -	2 0	1859	Com. Constable.

The following, from some of the first English voyages to the Persian Gulf, are of interest, though probably not very exact. At Jashk, in 1617, the westerly variation was 19° , according to Mr. John Hatch, master of the *Bee*. At Basra, in 1665, it was $13\frac{1}{2}^{\circ}$, (Travels of M. de Thevenot, Eng. Ed., Dec. 1686); and at Gwadel on the Mekrán coast in 1613, it was $17\frac{1}{4}^{\circ}$, observed in the ship *Expedition*, which touched there for the purpose of landing the English Ambassador to Persia (Purchas, his Pilgrimes). In 1829 it was $1^{\circ} 20'$ at Gwadel.

PILOTS.—Formerly all ships bound up the Persian Gulf took in pilots at Maskat for the gulf, as far as Bú-shehr; this is still often the case. It seems, however, to be an unnecessary expense; particularly as the men generally offering their services are not trustworthy, their knowledge being very local.

Details of pilots for particular localities, as for the river, where they are indispensable, will be found in the description of those parts.

If pilots are taken on board for the Arab coast, it is to be borne in mind that they are only to be depended on for the immediate neighbourhood of their own homes.

HEALTH.—It is in the cold weather that fevers are most prevalent; the so-called gulf fever, of the remittent type, is very dangerous, and con-

valescence is only possible by leaving the gulf. Cholera is generally present in some part or other of the gulf, and carries off great numbers of the natives: its ravages are said to be worst at Bahrein. Small-pox is also common; a small encampment at a short distance from an Arab town, is probably a kind of lazaretto for this disease, and should be avoided by parties landing. Ophthalmia is common among the natives.

The hot weather does not seem to be absolutely unhealthy; the men suffer, it is true, from aggravated prickly heat, boils, &c., but provided they are kept out of the sun, and ventilation attended to, there will be probably little serious sickness. As little work should be done aloft by day as possible; awnings are a *sine quâ non*, and the men should sleep on deck (the dew does not appear to have an injurious effect). Nothing but absolute necessity can justify the exposure of the men to the sun, and white hats should be insisted on. For those who may consider these remarks extravagant, the case of H.M.S. *Liverpool* may be recorded; through unacquaintance with the danger, this ship lost three lieutenants and 20 to 30 men in one day, just as she entered the gulf, on her passage up to Bú-shehr, in August 1821, from the *heat* only. The thermometer ranged from 103° to 106°.*

TOWNS.—The small towns in the Persian Gulf are all very similar, a square fort of rough stone with loop-holed towers at the angles, or several detached round towers; the Sheikh's house and perhaps one or two others of stone, the others of mats made of date leaf stalks; a date grove in the immediate vicinity, and a detached tower or two near the wells are the invariable components. They are generally built near some small creek or backwater, or other smooth place for hauling up their

* In July 1821, Mr. Rich was staying at Bú-shehr; he had come from Baghdad where he had been political agent for many years, and had with him some servants, natives of that city. The following extracts from one of his letters give a very correct notion of the Persian Gulf summer. (See *Narrative of a Residence in Kúrdistan, &c.* By the late C. J. Rich, Esq., Resident at Baghdad. London, 1836.) "I never felt anything so oppressive in Baghdad as this heavy damp heat, which is quite stifling. The thermometer only 95°, but it is 91° *all night*; sleep is out of the question. The hot sulphureous blasts of a Baghdad saum are quite refreshing compared with it. I never had the prickly heat so bad before. I am one wound all over my body. It is not the heat I so much complain of as the steam and closeness, which is very relaxing and irritating. My poor Baghdadis look like ghosts; and even they are covered with prickly heat. 'Sir,' said Yusuf Aga to day, 'we can live in fire, but not in a Turkish bath.' He said this upon my remarking that it was quite delightful to hear the Baghdadis at last obliged to complain of heat."

This description was written of Bú-shehr, and the south end of the Gulf and Arab coast are even hotter and more trying.

The Arabs say that when the Dog Star (Sirius) rises between the hours of 2 and 3 in the morning the hot nights are over.

boats. The large towns are walled round, and have a larger proportion of stone buildings. There are nowhere any pretensions to architecture, and never more than two stories to the houses. The water reservoirs are often a prominent feature in the towns on the Persian coast, or in their vicinity. They are either oblong and arched over, or circular, when they have domes built over them; being white, they are often conspicuous from seaward, particularly the domed ones.

Any estimates on the population are very difficult to make with any degree of probability; the people reckon the population as so many men, and give the wildest guesses at the number when asked. The numbers, where given, in this book, are either from an estimate of the number of houses or boats, or from verbal information of the more intelligent men.

The guns mounted on Arab fortifications are, almost without exception, old unserviceable iron European guns, originally ship guns, with old rickety carriages. When fired, about half the charge escapes at the vent. They have a curious custom of placing several guns quite unprotected outside the gate of the fort.

The navigator need not be surprised to find that any of the towns and villages, described in this book, have disappeared, or, on the contrary, that new towns have sprung up not mentioned in it.

New towns originate frequently through the secession of a certain number of families, who, being dissatisfied with the chief of their own tribe, emigrate and build a town of their own. Many towns, also, which had been abandoned during the pirate times are being gradually reoccupied.

On the other hand, if a town be abandoned, as for want of water, or from the extermination of the inhabitants in war, &c., the buildings are mostly of such a perishable nature that all traces soon disappear.

PRODUCTIONS and TRADE.—The great heat of the summer is very favourable to the growth of the date. The dates grown on the Shat al 'Arab, said to be the finest in the world, are sent to all parts of Asia; large quantities are also exported from the Bâtneh coast. The date is the staple food of the Arabs.

Pearls are the most important export of the Persian Gulf, and the fishery gives employment to the greater part of the maritime population; nearly all the pearls are exported to India. The season of the fishery is from May to September, during which time it is pursued with the greatest assiduity by the available part of the population. During the latter month, when the date harvest also occurs, the towns and villages are nearly deserted.

From 2,000 to 2,500 boats are employed, ranging from 10 to 40, or

perhaps 50 tons burden, the crews varying from 8 or 10 to 30 men. The value of the pearls raised in 1859 was estimated at 200,000*l.* sterling.

The right of fishing is common to everyone, but the Arabs of different towns appear to have a tacit understanding about their respective fishing grounds, or else, motives of convenience limit them to the neighbourhood of their own towns. Thus Koweït boats fish as far south as Jezíret Bú 'Alí, the Bahreïn boats from thence to Arzeneh, the Abú Thabí and Shargeh boats to the south and east of that island.

Nearly all the towns on the Arab side, and many on the Persian, send boats to the fishery.

Abú Thabí sends a greater number than any other town, viz. 600; Bahreïn is next with 400; and so on, down to small villages fitting out only 10.

The proceeds of the fishery pass into the hands of a small number of wealthy Arab merchants residing at Lingeh and Gaïs on the Persian, and Bahreïn, Abú Thabí, and Shargeh on the Arab coast. They pay the divers chiefly in food and clothing, making small advances to them during the winter to keep them in a state of dependence, the pearl divers being a highly improvident race.

The fishery is pursued on any banks where the bottom is hard and level, without rugged rocks, and not at a greater depth than 12 or 13 fathoms; * the general Arab name for such a bank is Hehr. It appears the longest time the diver can remain under water does not exceed one minute and a half.

A few large boats leave Bahreïn and the ports of 'Omman to fish for pearls at Sokotra, and on the north-east coast of Africa, in the cold season, returning in time for the fishing season in the gulf. In 1860, 30 boats left the Gulf for these distant fishing grounds, 12 of which belonged to Bahreïn.

A large number of horses is exported from the Gulf to India (the Nejd Arab is perhaps the finest horse in the world); they are packed very closely in the native vessels, and often are damaged on the passage; the largest baghalahs, which are only 300 or 400 tons, carry 80 to 100 horses.

From Persia, carpets, dried fruit, almonds, rosewater, &c. are exported to India, but not in large quantities.

* They can work at the bottom even in greater depths, as is proved by the following occurrence: On the survey of the S.E. coast of Arabia in 1845, a three-pounder iron gun was dropped overboard from the E.I.C. tender *Nerbudda*, when at anchor in 15 fathoms, off Ras Fartak, in March. Some pearl-fishers from Al Khábúreh on the Bátneh coast, on their way to Makallah and Ghubbet 'Ayn, were engaged to recover the gun, which they did for five dollars.

Corn, mules, and asses are exported to the Mauritius from both Bú-shehr and Maskat, also salt and salt-fish from the latter place. Shark-fins, &c. are also sent to India for the China market.

The imports are chiefly rice, also timber, English piece goods, indigo, iron, and lead, from India; sugar from Batavia and the Mauritius; coffee from the Red Sea.

The number of square-rigged ships employed in the gulf trade, except to Maskat, has decreased of late years.

The capricious and oppressive proceedings of the Persian authorities at Bú-shehr may account in part for the decrease; the trade with India is now chiefly carried on in native bottoms.

A direct trade with England from Basrah is carried on, on a small scale, by some English merchants of Baghdad.

COMMUNICATION.—A six-weekly steamer runs with the mail between Bombay and Basrah, calling at Karachí, Maskat, Bandar 'Abbás, and Bú-shehr.

The communication between Bú-shehr and Baghdad is monthly, excepting in the hot months; a small sailing vessel takes the residency mail to Basrah (passage varying from 5 to 10 days or more), and the armed steamer belonging to the British Government takes it thence to Baghdad. There is a private mail from Baghdad to Beirút on the Mediterranean, which is sometimes plundered by the Arabs.

Roads.—There are no roads, as we understand the word, and wheeled carriages are unknown, with the exception of gun carriages.

Communication with the interior is entirely by beasts of burden: camels, mules, and asses; the roads are merely tracks made through the country by passing caravans, often follow the beds of water-courses, and are so slight as to be hardly perceptible to a stranger; everybody varies the track, as it suits his convenience.

Native Craft.—The trade between the Gulf and India, the Red Sea, and the east coast of Africa, is carried on almost exclusively in native vessels called baghalahs. They are from 100 to 300 or even 400 tons, and are clumsily rigged with a huge main mast and latteen sail, and a small latteen mizen;* they cannot tack, and require a large crew. They do not go to sea in the S.W. monsoon. Though clumsy in appearance above water, with a high poop like an old-fashioned ship's† they have fine bottoms and sail well, especially in light winds.

* Probably the largest baghalah in the gulf in 1860 was the *Duniyah* (*World*) of Bahrein. Her mainmast was a single spar, 104 feet in length by 8 in circumference, and her main yard, 140 feet in length. This mast is stepped without sheers.

† The height from the taffrail to the water is, in a large one, as much as 27 feet, when light.

The smaller vessels, used in the pearl fishery and for the coasting trade, are called batils, and bagárahls; they vary from 10 to 120 tons, and are rigged similarly to the baghalahs. They are beautiful models and sail very fast.

The dow of the pirate times is now never met with.

PIRACY.—For the information of strangers, it may be stated, that a piracy on a European vessel has been unknown for years. No molestation need be anywhere apprehended by the smallest trader within the Persian Gulf or gulf of 'Omman, even if wrecked; except, in this case, such petty acts of pilfering as might occur anywhere. To the southward of Ras al Hed a vessel grounding would certainly be plundered by the Bedúin, who are the sole inhabitants, and under no human control.

SALUTES.—All the Arab chiefs attach a great deal of importance to a salute from a ship of war. The usual number is three guns, and five, to some of the most important. The Sultan of Maskat is saluted with 21 guns.

The salute will always be returned at once.

OBTAINING INFORMATION.—It is most difficult to get information from the Arabs of a trustworthy nature. They are perhaps the least thinking people in the world; they know very little, and care to know but little. Unfortunately an Arab will not admit that he does not know, he will pretend to know a great deal, and give you as much erroneous information as occurs to him during the time he is talking to you, and when he does not know the name of a place he is never at a loss to invent one. This habit must not mislead the stranger.

PRESENTS.—A ship anchoring off an Arab town is always besieged for medical aid; eye medicines, caustic for sores, and lint seem in most request.

If small presents are to be made for any service rendered, the following articles are preferred:—Fire arms (*flint lock*), fine grain powder, cutlery, small telescopes, cloth (red and drab, favourite colours), coloured silk handkerchiefs, gun flints.

BUOYS and LIGHTHOUSES.—These, in Europe, indispensable aids to navigation, are unknown in the Gulf, except at Bú-shehr and the river, where some buoys were placed by the British Government. Even a beacon or artificial land-mark of any kind is rare, and where existing quite insignificant. There are no docks, or any accommodation for repairing vessels.

CHAPTER II.

PASSAGES TO AND FROM THE PERSIAN GULF.

BOMBAY to the GULF.—In September and October, which are the months of light variable winds between the monsoons, the passage is tedious ; light north-westerly winds are general. There will be no advantage in keeping near the Indian coast to the north of Bombay. In September, the remains of the monsoon swell will be still felt.

If bound to Maskat a course as nearly direct as possible should be made to that place, but if bound to the gulf direct, a ship should not make the Arabian coast, but keep more to the northward on the Mekrán side of the Gulf of 'Omman.

In November, December, January, and February, the passage is facilitated by the N.E. monsoon. A ship should keep to the north-westward, not far from the Katiwar coast, till in latitude 23° or $23\frac{1}{2}^{\circ}$, when she may stand across to the westward. In the north-east monsoon the weather is generally fine and clear, and breezes from moderate to strong (4 to 6) ; but with the gulf of Kutch open, north-east squalls with heavy rain sometimes occur ; strong S.W. or S.E. winds have been experienced at the same time, of short duration.*

The north-east wind may possibly be carried quite to Maskat or Ras al Kúh, if a nashí is blowing in the gulf of 'Omman ; more probably, the north-east wind will be lost about longitude 62° or 63° , and after a small zone of variable winds, a north-wester or light north-westerly winds in the gulf of 'Omman will follow.

As a vessel would probably either have light airs with a lee current (S.E. perhaps 30 miles a day) or a strong north-wester (either of which would render her passage up the coast very tedious) ; she should not attempt to close the Arabian coast till Maskat bears to the southward of S.W.† If bound to the gulf direct a ship should not approach the Arabian coast at all.

* E.I.C. sloop of war *Elphinstone*, from Bombay to the gulf, December 17th, 1831, 120 miles to the westward of Dwarka, experienced a heavy gale from S.E., and N.E. o East.

E.I.C. steam frigate *Ajdaha*, from the gulf to Bombay, when 60 or 70 miles S.W. of Dwarka, experienced strong S.W. winds for 12 hours, shifting in a violent squall to N.E. with heavy rain, February 3rd, 1857.

† The E.I.C. brig *Palinurus* in December 1847, was 12 days working up from Sheháb to Maskat, a distance of only 60 miles.

In March and April, when north-westers prevail on the coast of India, and the land wind is light and uncertain, little is to be gained by keeping in with the land. A ship should make a direct course across, taking advantage of every shift of wind to make northing.

In May or early in June, on the contrary, on leaving Bombay ; every slant of wind should be profited by to make westing, so as at any rate to be able to make the passage, when the strong S.W. or W.S.W. winds set in at the beginning of the monsoon. Heavy gales from the S.W. in anticipation of the monsoon are sometimes experienced in these months. The south-west monsoon will set in, early in June generally, with thick weather, heavy squalls and rain ; it sets in somewhat sooner on the south-east coast of Arabia than in Bombay. Very bad squalls from W. and N.W. and unsettled weather, are experienced sometimes in May on the coast of India ; after which there is a period of light winds and unsettled weather with frequent S.W. sea breezes in the afternoon, lasting for three days at a time, till the setting in of the south-west monsoon in the first half of June.

On the coast of India in May, or early in June, gales from S. and S.E., approaching a hurricane in force, are sometimes experienced off Bombay.

All ships leaving Bombay in May, though it may be fine when they start, should be prepared for meeting the first burst of the monsoon before reaching the Persian Gulf.*

Leaving Bombay for the gulf in June (after the south-west monsoon has set in), July, and August, it is the practice to make what is called the southern passage ; i.e. running down to the south-east trade on the south of the line, to make the westing.

We are not aware of any case on record of a sailing vessel beating straight across, which left Bombay between the 15th of June and the end of July. It has been repeatedly done by ships leaving early in June or in the beginning of August. Steamers have always been able to steam straight across from Bombay to the Persian Gulf, keeping somewhat to the northward of the direct passage. A large, fast sailing ship would probably be able to make the direct passage at any time. Very heavy weather and hard squalls would be experienced, with a very high sea, and she would take advantage of any change in the direction of the winds to make westing. Some years the monsoon is much heavier than others, and there are often breaks of moderate weather of uncertain duration. Probably she would do best between 20° and 23° of latitude ; farther to the south she

* On June 8th, 9th, 10th, 1836, the E.I.C. sloop of war *Ternate*, experienced a heavy gale, when 180 miles E. by N. of Ras al Hed, was partially dismasted, and threw her guns overboard.

would get heavier weather, while on the other hand it would not be prudent to get too near the coast, where there would be a heavy swell and lee current; the monsoon also does not always blow home; so that she might have light winds, which would prevent her beating against the swell and current.

The Southern Passage, a distance of about 4,000 miles (while the direct distance is only 840), averages from 35 to 45 days to Maskat. The soundings will be a sufficient guide for the distance off shore, on working out of Bombay harbour. When in 15 fathoms or upwards, you may stand down the coast; it is proper to keep in soundings of not less than 30 fathoms, which is quite near enough to the coast, and yet not to deepen off the bank of soundings altogether; 40 to 50 fathoms would be a very suitable line of depth. The reason is, that if no observations are obtainable, by keeping on the bank of soundings, there can be no danger of running on the easternmost of the Lakadive group; but, after reaching lat. 10° N. it is best to make as little easting as possible, as the S.E. trade is found nearer the line by the Maldives, than in the meridian of Ceylon. The weather will be overcast and thick, so that possibly no observations will be obtained for two or three days, with heavy showers and hard squalls at W. and W.N.W.; the wind being from S.W. to W.S.W. It will be more from the northward in August than in the two former months. A current will generally be experienced setting to the S.S.E., especially in July and August, of 20 to 30 miles a day.

In 5° N. the weather will begin to be finer and more moderate. The equator will be crossed in from 77° to 79° longitude, with light winds, cloudy weather, and possibly rain, with occasional calms; the wind varying from W. to S.S.W., and sometimes an easterly current. This weather will continue till in latitude 5° or 6° S.; or till the south-east trade is fallen in with. In July or August, probably no trade wind will be experienced, before reaching latitude 8° or even 9° S.*

In June, according to Horsburgh, the south-east trade would be fallen in with in 5° S., in which case the westing might be run down in that latitude; but it appears that, in general, vessels are obliged to pass to the southward of the Chagos archipelago, which appears the preferable route at all times.

Diego Garcia is sometimes sighted, but the cocoa-nut palms being only visible about 15 miles, it is often passed without being seen.

On getting the trade, a course should be shaped for the Seychelle islands, about W. by N. The breeze will be steady and strong, with fine weather, and westerly current.

* E.I.C. schooner *Mahi*, in July 1850, got the S.E. trade in 1° S., having crossed the line in $75\frac{1}{2}^{\circ}$ E.

Horsburgh recommends running 1 or 2 degrees to the westward of the meridian of Ras al Hed before steering to the northward, but probably much time would not be lost by sighting one of the Seychelle islands for a fresh departure. This would be two degrees farther west, but then the south-west monsoon would be a little more free, which would compensate for the extra distance.

The line should be recrossed in 56° or 57° longitude; the trade will be carried as far as the line, veering gradually to S. and S.W. The weather will be moderate till in about 4° N., when the south-west monsoon will increase in strength, reaching its maximum force in 10° to 12° N.; when it will be a moderate to fresh gale (7 to 8) with gusts, and a very heavy sea, weather hazy.

On the parallel of Sokotra probably the meridian of 58° will be the best distance off it, as the weather and sea are always worse nearer that island; between 54° and 56° , also, a S.W. counter current of 30 miles a day will be experienced; while, on the other hand, it is not advisable to be too far to leeward in case of the monsoon hanging to the westward; the heavy sea and easterly current must also be considered.

From the equator an increasing north-east to easterly current will be experienced; off Sokotra, probably easterly, 30 or 40 miles a day.

The weather will be moderate, and more hazy, as the latitude of Ras al Hed is approached, the land below which should not be made. As soon as Ras al Hed bears South, the monsoon is quite lost, and light variable winds with a north-westerly current, or a moderate south-easterly breeze succeed it, with a swell following round the cape.

Immediately on rounding the cape, the sudden change from the pleasant cool weather of the monsoon, to the damp stifling heat of the Persian Gulf will be severely felt.

The GULF to BOMBAY.—The winds are favourable throughout the year, when clear of Ras al Hed. In the N.E. monsoon, or fine season (from October to April or May), the wind is mostly favourable for getting out of the gulf of 'Oman; the current, if any, setting to the south-eastward, and N.W. or N.E. winds prevalent.

In the S.W. monsoon, when light south-easterly winds or calms are common, with a heavy swell rolling up from S. or S.S.E., round Ras al Hed, and the current on the Arabian coast setting to the N.W., it is somewhat tedious to get clear of the gulf of 'Omman.

In this latter season, the monsoon will be experienced in longitude 60° , blowing at first from S., or even S.S.E., and veering to S.W. and W.S.W. as the longitude is increased. A course should be shaped so as to be on the parallel of Khundarí (Kenery), when in about 40 fathoms; that island being the point easiest to make in thick weather.

The vessel will have steady monsoon weather with a heavy sea, and perhaps squalls, till on the edge of the bank of soundings, where the sea is said to be always worse, and rain squalls, with thick weather, will be the rule. A current of 12 to 15 miles a day will be experienced, setting to E. and S.E. Frequently, no observations will be obtained the last two days of the passage.

In the fine season, the best passage is made by keeping to the northward of the straight course, so as to pass near the Katiwar coast, where the north-easterly wind is stronger, or, after March, north-westerns will be experienced.

INDIA to the GULF.—In the S.W. monsoon, a vessel leaving any part of India, south of Bombay, would have to make the Southern passage. In the N.E. monsoon, her best course would be to work up the Malabar coast with the land and sea breezes, and proceed as though leaving Bombay.

In March, April, or May, when the land winds on the Malabar coast are weak, it would be better to make as direct a passage across as possible; as working up the coast would then be no advantage, in fact, the reverse, as the North-westerns set in about the middle of March, and strong W. and W.S.W. breezes blow on to the Sind and Kutch coast, even in the latter part of February.

CAPE OF GOOD HOPE to the GULF.—In the S.W. monsoon, the passage would not be different from the latter part of the southern passage to the gulf from India (before described) after passing the line. Her passage from the cape to the line would be the same as the ordinary track of vessels to Bombay at that season.

In the N.E. monsoon, the passage would be best made by going round by the Malabar coast and Bombay, thence as detailed for the passage from Bombay in that season. It would be much more tedious, if not impossible, to work up the Arabian sea, between Sokotra and the Maldivé islands, against the strength of the N.E. monsoon and lee current.

RED SEA to the GULF.—In the S.W. monsoon, after clearing the gulf of Aden, and getting the monsoon in longitude 51° , a vessel would have no difficulty in running up the Arabian coast. She should not be too close in, as the weather is hazy; and very near the land the wind sometimes falls light. The current sets to the N.E. along the coast.

In the N.E. monsoon the passage is very tedious, with a constant lee current. Vessels have, however, occasionally worked up the coast against it to Ras al Hed. It would take about six weeks.

During these months sudden gales from the N. to N.W., called Belats are experienced near the coast, only between Cape Fartak and Masíreh

island;* otherwise the weather would be fine, and the wind N.E. near the coast, and more from the eastward, at a distance from it.

In Kuria Muria bay strong S.W. gales have been experienced in February and March, lasting 6 days.

CHALLENGER BANK.—H.M.S. *Challenger*, 9th August 1880, when in lat. $22^{\circ} 29' N.$, and 40 miles distant from Ras al Hed, obtained two casts of 13 fathoms on a bank which appeared to be 3 miles in extent; it has, however, not been since found by vessels sent to search for it.

* The belat blows with a beautiful pale blue sky, sometimes, light streaky white clouds in an arched form hang over the land, and the outline of the hills is sharp and well defined. The atmosphere becomes exceedingly dry, and clouds of sand are driven off by this wind. It blows in very violent and sudden gusts, and changes about from N.W. to N.E. It lasts 3, 7, or even 10 days, and is dangerous to ships near the shore, for when at night in a calm, the gusts will come down (at short intervals), without any warning, except the noise on the water.

CHAPTER III.

NAVIGATION OF THE PERSIAN GULF.

GENERAL OBSERVATIONS.—It may be laid down as a general rule that the passage up the gulf is more difficult than down it.

A ship should, if merely passing up and down the gulf, keep entirely on the Persian coast; at the entrance the tides are very strong on the Arab side, and the rest of the Arab coast is fronted by extensive reefs, and is very low.

Care is required in the navigation, owing to the numerous islands, and strong tides near the entrance, and owing to the frequency of strong breezes and bad weather (especially in winter), which set in without much, if any, warning; as, also, to their liability to sudden shifts.

During *shemáls*, especially in summer, and during the *nashí* of the southern part of the gulf in winter, the very hazy state of the atmosphere renders it impossible to see the land unless quite close; a stranger would never believe the haze to be so thick as it really is, and he might find himself quite close to the beach before seeing it.

PASSAGES up the PERSIAN GULF.—Vessels bound up the gulf generally have occasion to call at Maskat, the following directions will serve whether she does so or not.

In the *fine season* the high land of the Arabian coast will generally be seen at great distances, especially at sunset. The mass of high land between Ras Abú Dáúd and Súr is that always made, an extent of 60 miles along the coast. The mountain Jebel Abú Dáúd will be the nearest, while over it are the higher mountains of Kerríyát (Jebel az Z'atarí), having the great valley called by navigators the "Devil's gap" between them, and the mountains called Jebel Beni Jábar. Jebel Abú Dáúd should bear S. to S.S.W. according to the distance off. As nothing will be gained by closing the Arabian coast until Maskat bears S.W. at least; if working up from the southward a ship should keep at a distance (perhaps 50 or 60 miles) from the coast. This is desirable to avoid the light airs and south-easterly current experienced near the shore. A remarkable saddle hill (1,340 feet), the highest of the black hills near Maskat, and 2 miles S. by W. of that town, is a good mark for telling its whereabouts; it is very conspicuous when bearing W.N.W. to W.S.W.

On a nearer approach, Fahil islet will prevent a stranger passing the place; and Jillálí fort, at Maskat, is sometimes seen when bearing about West, showing white in the morning sun against the black hills behind.

There is anchorage, only in very deep water quite close to the shore from Maskat to Kerríyát, and thence to Súr often none at all.

In the S.W. monsoon, a vessel would pass as close as convenient round Ras al Hed, which is a low sandy point and deep-to; it is not probable, owing to the hazy state of the air, that the high land would be seen till off Súr or Kalhát, and if the vessel were not pretty close in, it might not be seen at all.

The high land may often become visible for a short time about sunset.

There is no difficulty in getting up to Maskat at this season, but if the cove were passed in the night, or through not being close enough in, it might be tedious getting down to it again.

There is no danger whatever for a ship between Ras al Hed and Maskat.

MASKAT to the ENTRANCE of the GULF.—Leaving Maskat for the gulf with a fair wind, a course N.W. by N. $\frac{1}{4}$ N. for 146 miles will carry a vessel abreast of Ras al Kúh, and about 8 miles off it, and thence it is 60 miles farther on the same course to a position abreast of the Great Quoin (Sellámeh) and 5 miles distant from it. With a north-wester it would be preferable to stand well over towards the Persian shore and work up along it, in preference to the Arabian side, where there would be a lee current and heavier swell. Besides; some of the islands of the Deimáníyeh group are very low, of even form and brown colour, and it would be better to avoid making them in bad weather, especially by night. They are deep-to on their north side, so that the soundings would be little guide. In fine clear weather the mountains on both the Arab and Persian coasts (Jebel Nakhl and Jebel Shahú) may be seen at once when in the middle of the gulf.

The Persian Coast is deep-to and safe to approach to the eastward of Ras Jáshk, but the shore is low, the hills being a considerable distance inland. It would not be desirable to approach it too closely, as it has been very imperfectly examined. The 100-fathom line is only 5 to 8 miles off the points Ras Zegín and Meidáni.

The Quoin hill, inland of Jáshk, is a capital landmark and conspicuous except from E.S.E.

The shore is very low on the whole of the Persian coast as far as Hormúz, excepting one or two small hills near the beach. It is deep to, and deceptive as to the distance off, as the low shore is not seen farther than 4 or 5 miles, at which time the appearance of the hills would lead one to imagine the vessel to be full twice that distance from land. The

lead is little guide unless kept going very quickly. Care must be taken in passing the shoal east of Ras al Kúh, and the flat off Ras as Shír, or in standing in towards them in beating up. The land mark Kúh i Múbárek is conspicuous when seen from N.W. or S.E., but less so from abreast of it, when it is not so plainly visible against the light coloured hills behind; it is of light colour and only visible 18 miles.

Jebel Kurrye and Bís are remarkable, and visible quite across the straits from near Límeh.

Arabian Coast.—In clear weather the great mountains of the Ruweís al Jebál will be seen abreast of Ras Jáshk; they form in two principal peaks.

It is not advisable to stand over too close to the Arab coast in working to the northward from Ras al Kúh, though there are no dangers off it, as the wind is generally lost, or becomes baffling under the mountains; the tides are very strong, especially north of Umm al Fíyárín, and the water too deep for anchoring.

Umm al Fíyárín generally shows light coloured against the mountains behind, and though a lofty islet, quite insignificant by comparison. The remarkable group commonly called the Quoins cannot be mistaken: the great Quoin is visible 27 miles; sailing vessels should not pass very close to, or to the southward of them, unless with a strong fair wind; and even then, the breeze is seldom carried past these islands. The tide sets about N.W. and S.E. near them, and is very strong, with eddies and races south of them.

ENTRANCE of GULF to JEZ. TUMB.—From Ras al Kúh round to Henjám island the tides are strong quite across the sea, and have a material effect on the vessel's progress in short intervals of time. The two mountains Shemíl and Ginao are seen in clear weather from near Umm al Fíyárín. On rounding the Quoins, Lárek will be seen, making at first in a great many detached lumps; and, if a working breeze, a good stretch over close to it should be made, it being safe to approach.

In light winds, vessels working in, have been carried by the flood to the north-eastward of Lárek, and it being dark, did not find it out till they tacked, and made Lárek on the starboard tack, close to. It is H.W. at F. & C. at Musendom about 10 hours, but the stream of flood would run three hours after, and the stream of ebb as much after L.W.; from which data the direction of the stream, whether flood or ebb, may be roughly estimated.

Hormúz, with its several white peaks, will be seen on the starboard bow, as you stand towards Lárek. The shemál blows here W.S.W. to S.W., and a vessel should not get too far over to the shore S. and E. of Hormúz, which is a lee shore for that wind without any shelter. Hor-

múz or Kesm roads are good places of shelter, if caught in the straits in a heavy shemál. The water close to Lárek is too deep for convenient anchorage.

Quoins to the Tumb.—When the great Quoin bears South, 5 miles distant, a course W. by S. for 67 miles will bring a vessel abreast of the Tumb (Great island), nearer the edge of the Basídúh flat than to the island.

The hills on Jezíret at Tawíláh are characterized by light colour, and remarkable table topped and precipitous forms. Henjám is covered with irregular dark coloured hills, and when seen from the E. or W. has a remarkable gap or valley near the north end. Between the Quoins and the Tumb, as the chart shows, the sea is clear for working quite across the gulf. Henjám sound affords good shelter against all winds. In approaching, or standing over towards the flat off the S.W. end of Jezíret at Tawíláh, the lead must be kept going. The discoloured water will indicate its edge by day very clearly, although a vessel may stand some distance into the discoloration before shoaling her water. A look out should be kept for fishing boats at anchor on the edge of the flat. Jezíret Tumb (seen about 15 miles by day) is level, brown coloured, and does not show well at night; it is deep-to, except on the south side, and has foul ground $\frac{1}{2}$ a mile off the S.W. corner. From this island a departurè is taken for entering Basídúh roads.

TUMB to KAÏS.—When the Great Tumb bears S., about 5 miles distant, a course, W. 43 miles and then W. $\frac{1}{2}$ N. 30 miles, carries a vessel abreast of Kaïs island. After passing the Tumb, the island of Nabiyú Tumb (or little Tumb) will be seen; it makes in two lumps (dark little peaks at N. end), is deep-to, and safe to approach. On the starboard bow Jebel Bostáneh will be seen, making like a high island.

The course given above takes a vessel $1\frac{1}{2}$ miles N. of Furúr island, and $5\frac{1}{2}$ miles from the shoal named after it. The island is a mass of dark volcanic peaks and visible 25 miles; it is quite deep to all round, and may be passed quite close. By keeping in 25 to 30 fathoms, a vessel will be clear of the shoal at night, and also of the island, if not seen. The depth increases to 40 and 44 fathoms towards Furúr, and decreases towards the shoal. The island shows well at night.

The Yarid hills, an isolated mass, will be seen to the left of Bostáneh, when bearing N.W. by W.; and before reaching Furúr, the grand landmark Jebel Taranjî, a round topped mountain, will be seen to the left of these hills; when you will be clear to the westward of Furúr shoal. This mountain is visible about 70 miles. Kaïs island may be seen about 13 miles, is of even form and similar in appearance to the Great Tumb, though much larger, and has a few trees on it. Its E. and W. points are

low, and the island would be difficult to see by night. Deep water is carried close to the outer side, which should not be approached nearer than a mile.

In working from the Tumb to Kaïs, it is as well, in light winds, to keep to the northward of the Tumbs, so that if the wind falls light and the tide be unfavourable, a vessel may be able to anchor. The lead is a safe guide approaching the flat, not so towards the Tumbs. If standing between the Tumbs, remember the tide sets east and west very strong, 2 to 3 miles at springs.

The coast of 'Omman is not visible at a greater distance than 6 or 8 miles—so that it is seldom made by vessels working up; it is quite free from danger as far as Ras Hasah.

It would be advisable to be in with the Persian coast by daybreak, as if there is no land wind the north-wester always draws a few points off that coast about that time.

Bú Músa: a dark sugar loaf hill on this island, may be seen about 20 miles; the rest of the island is low with a few, detached, small, dark hills. There is foul ground extending $\frac{1}{2}$ to $\frac{1}{4}$ mile from the beach. There is no objection to making a stretch to the southward of this island, if convenient; the lead is no guide approaching it. Serí is low and has many hillocks on it, is not visible more than 12 miles, and has foul ground round it, except on the E. side, to a distance of a $\frac{1}{4}$ to $\frac{1}{2}$ a mile: the lead is no guide.

Nabiyú Furúr has a small dark saddle hill on the E. side, and a reef one mile off the N. W. corner; lead no guide, visible about 14 miles.

If becalmed E. or W. of any of these islands, attention should be paid to the drift. If a strong north-wester sets in, a vessel may find shelter close in shore anywhere E. of Bostáneh, or in Moghú or Chárek bays, or in the bay on the east side of Kaïs.

In north-westerns, less sea will be found, by working up near the Persian coast. A ship may stand quite close in at this part, except under Jebel Yarid, which has shoal water 1 to $1\frac{1}{2}$ miles off it.

KAÏS to the MUTÁF or BERDISTÁN* BANK.—When the island of Kaïs bears N. about 7 miles, a course N.W. by W. $\frac{1}{2}$ W. 45 miles, brings a vessel abreast of Sheikh Sho'aib, and about 5 miles from it; and thence N. W. by W. $\frac{1}{4}$ W. 120 miles, will take her past Ras Mutáf (in 13 to 15 fathoms) opposite Mokheileh islet, and 11 miles off it.

Hinderábí is an island similar to Kaïs, and visible 13 miles; it has deep water close to the reef on the south side, which has not been surveyed, and should not be approached nearer than $1\frac{1}{2}$ miles.

* So called hitherto by English seamen.

Sheikh Sho'aib is another island similar in appearance to the two last, but much larger; a large round tree on the highest part near the centre is conspicuous, and has been taken for a sail. It is quite deep-to and safe to approach.

The great landmarks called by seamen 'Aslúh notch and the Barn hill will be successively seen; they are each visible about 70 miles, and cannot well be mistaken.

The bank, Ras Mutáf, will on this course be passed in 13 to 15 fathoms, a very safe depth; the muddy appearance of the water, which extends some miles outside the shoal, is a good indication of approach to it by day.

Jebel Dreng makes in an even mass with scalloped top; when these scollops are in one, you are well past the shoal called Ras Mutáf. This mountain is seen 60 miles.

Working from Kaïs to Ras Mutáf.—A vessel may work up either inside or outside Kaïs island, as convenient. The mainland is here very deep-to; a reef extends off the north side of Kaïs about one mile, on which you shoal quickly.

There is no danger on the Sambarún shoal.

Working up outside:—The 20 fathom line on the edge of the pearl banks is quite far enough to stand over; and there is nothing worthy of remark till past Sheikh Sho'aib, when she must not stand farther than 30 or 35 miles from the island on the off shore tack, on account of the Shah Alum shoal. From the shoal the Persian mountains are nearly down, so that if the coast be high up above the horizon, a vessel cannot be near this danger. Hinderábí should not be approached within $1\frac{1}{2}$ miles on the south side (as stated before). The lead is no guide passing either this island or Sheikh Sho'aib; this latter is quite free from danger, and there are 45 fathoms only 2 miles from the island. If convenient, a vessel might work through between this island and the main, where there is anchoring ground and no danger. If caught in a north-wester, Cherúh bay, the anchorage off the east end of Sheikh Sho'aib, or Shíwúh, are convenient places of refuge. A vessel should not stand too close past the west end of Sheikh Sho'aib on account of the flat off it.

From Shíwúh to Tahrí the coast is very bold, and no anchorage except quite close. Small vessels would find shelter in Nábend bay, or Tahrí, but very close in, and much swell; the former place especially, is not adapted for a vessel of any size.

In a north-wester, a vessel, by making short tacks in shore, would get up from Tahrí to Ras Mutáf, when there would be too much sea outside. There is good shelter under this shoal. In working round this bank, do not come under 11, or at night, 12 fathoms.

RAS MUTÁF to BÚ-SHEHR.—From the position 11 miles off Mokheileh island in 14 fathoms, a course N.N.W. a little northerly, for 80 miles will take a vessel opposite Ras Shagháb, the westernmost low sandy point of Bú-shehr peninsula, in 6 to 8 fathoms, when Bú-shehr will be in sight to the north-eastward. The soundings will be 15 to 17 fathoms, decreasing to 12 off Ras Halíleh; which depth will by night, keep her clear of the very low sandy point Ras al Khán, and at a safe distance from the coast.

The Asses Ears, (so called by seamen, but by the natives Bú Reyyál,) on the lower range near the coast are very conspicuous; they are visible 45 miles, forming in three little pinnacles. Over this range is seen the great mountain Kúh Khormúj, which, though it forms a very remarkable peak when bearing to the southward of E., has nothing striking in its appearance from the south-westward, where it presents only a long convex ridge.

The highest point on Bú-shehr peninsula, a small white dome on the summit, is 150 feet above the sea, and visible 13 miles; the date trees near Ras Halíleh would be first seen, appearing like a low island. The peninsula is of even outline and light brown colour. Running up at night, a vessel should close Ras Halíleh; by paying attention to the lead, she may stand into 6 (or even 5 fathoms, if necessary), until the land is seen, and run up along shore in that depth till about off the town, and then anchor. This will prevent her passing the place, and perhaps getting close in to Ras as Shat, which is so low that it is nearly overflowed at high water. Rockets or blue lights would be answered if there were any vessel of war lying in the harbour. If so far out by day, that the low land is not seen, the great bluff fall in the mountains near Gísakún is a useful mark; it bears N.E. $\frac{3}{4}$ E. when in one with the town, and is visible 70 miles.

In working up from Ras Mutáf, a vessel may make tacks of about 45 miles, so as not to approach Rennie shoal, or Farsí and 'Arabí islands. These latter are low sandy islets, and deep-to, only visible 6 to 8 miles by day.

Ras al Khán may be approached to 12 fathoms; it is sometimes nearly overflowed.

On getting above the Asses Ears, she should stand in to 10 fathoms, so as not to be too far out when wanting to make Ras Halíleh.

BÚ-SHEHR to the RIVER. When off Bú-shehr in 5 fathoms, a course N.W. $\frac{1}{2}$ W. 28 miles leads to the anchorage off Kháreg fort, passing Ras as Shat 3 miles off in 10 fathoms.

Khárgú is a mere sand-bank, with a reef extending three-quarters of a mile off it, which has 10 to 16 fathoms close to it. Kháreg is visible 17

miles, and will be sighted soon after Bú-shehr is quite below the horizon, but at night is often not seen till quite close, being of light brownish colour. It has a Quoin hill at the N. end, a bluff at the southern end, and a small tomb on the highest part. Kúh i Bang, a bluff hill, is visible from Kháreg. The reef surrounding this island is nowhere half a mile from the shore, and has 7 or 8 fathoms quite close-to.

Working up to Kháreg calls for no special remark ; the lead must be the guide standing in to Ras as Shat. At Kháreg, pilots are invariably taken on board for the further prosecution of the voyage to the river. For remarks on the rest of the passage, see the special description (page 226). These pilots may be implicitly trusted for the passage thither.

River to Kháreg.—When bound from the river to Kháreg and Bú-shehr, on clearing the bar and being in 5 fathoms, although the pilots are supposed to take the vessel back to Kháreg, it is preferable to verify their proceedings, by attending to the navigation ; as, being in the open sea, they are not to be depended on, nor indeed required, except perhaps on approaching Kháreg.

The course to Kháreg is E.S.E., distance 94 miles. After crossing several deep channels, or khors, and perhaps getting a shoal east of 6 fathoms on the tail of the rocky bank (least water at low water said to be 4 fathoms) off the Méidán 'Alí, the soundings increase, though irregularly, to 20 fathoms at 30 miles from Kháreg.

If making the island by day, after sighting it, steer to pass through between it and Khárgú, but if it has to be made by night, it is necessary to steer for the south end, which is a high bluff, and shows better by night; the reef extends at most a $\frac{1}{4}$ mile off the south end. Khárgú, being so low, would never be seen at night, till aground on the reef.* When the island is sighted (by day) the ship would be in 22 fathoms, deepening to 25 or 26 close to the south end. When the island bears North, the water will shoal quickly to 18, 14, and 12 as you haul round, remembering that 7 or 8 fathoms is close to the reef. If running down before a shemál you may expect gusts off the island, when hauling up for the anchorage, which should be done gradually with the lead kept going, anchoring in 10 to 12 fathoms, when she has stretched about 2 miles up from the S. point.

If working down in a south-easter, the pilots (after one or two days at any rate) are necessarily dependent on the ship's observations, as they do not understand the navigation of the open sea.

If after leaving the bar, a south-easter suddenly sets in, the vessel must carry on to get out to sea, as the pilots in that case will not attempt to

* Two steamers have grounded trying the passage through the straits at night.
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recross the bar. If obliged to anchor, she would ride it out best on the Meidán 'Alí, where it is said the force of the sea is less than in the channels, or than when farther out.

PASSAGES down the PERSIAN GULF. Kháreg to Bú-shehr.—The direct courses and distances from Kháreg to the southward being given in the passages up the Persian Gulf, it is not thought necessary to repeat them here; the reader can readily refer to them, and reverse the courses for the passage down. The remarks will be confined to points to which it is necessary to call attention exclusively for the passage down.

By night a vessel would steer half a point to the eastward of the direct course, keeping the lead going on approaching Ras as Shat; and feel her way down along the outer banks of Bú-shehr harbour till opposite the town, so as not to pass it. The flood tide being on the starboard bow, would render great attention to the lead necessary, so as to haul out as the water shoaled.

Bú-shehr to the Southward.—A vessel would round Ras Mutáf as in the passage up, and thence shape a course to pass outside Sheikh Sho'aib. The west point of that island is very low and rocky, and not easily seen in thick weather or at night; vessels often find themselves while running down passing much closer to this island than they expected; perhaps the ebb setting towards the straits inside the island, may account for this indraught. This is now the more likely to happen from an over anxiety to avoid the Shah Allum shoal.

In the event of a south-easter, it would not be advisable to stand into Nábend bay for shelter, as, if a shemál followed, it would be almost impossible to get out.

Nakhílú bay is the best place for anchorage in a south-easterly gale.

The west points of Hinderábí and Kaís are similar to that of Sheikh Sho'aib. If running before a north-wester, the extreme haziness of the air renders it necessary to exercise the greatest caution in making or passing any of the islands, the lead being little guide, or generally none at all. Furúr is the easiest to see, as it is dark coloured, and high; there is also no reef, except off the west side, where a small ledge projects a few hundred yards from the island.

Shelter might be obtained, in a koss, either in Chárek or Moghú bays, but you must either anchor well up these bays, where you would be sheltered in a shemál, or be ready to weigh at a moment's notice. Off Lingeh, and thence to the Basídúh flat, there is never much sea in easterly winds.

Henjám sound is the next available anchorage. The Great Quoin is generally easily seen, even at night, but, if not seen, you are far enough

to haul to the southward, when you shoal to less than 40 fathoms, as you will then be past the Quoins. There is good anchorage behind Hormúz in a south-easter.

The coast of Bâtneh should be avoided; it is a lee shore in a north-easter, and in the summer the current sets to the north-westward along it. A vessel, therefore, leaving the gulf and being past the low point of Ras al Kúh, would shape a course for Maskat direct; or in the summer to the eastward of the direct course, until Maskat bears South. In the S.W. monsoon, the swell will be felt before reaching Maskat, rolling up from the south-eastward; it is perceptible even off Ras al Kúh. If not intending to call at Maskat in this season, it will be well to be near latitude 24° before opening Ras al Hed, in case of having the wind hang at S. to S.S.E., with a heavy sea.

CHAPTER IV.

ARABIAN COAST FROM RAS AL HED TO MASKAT.

VARIATION in 1864, $0^{\circ}40'$ W.

GENERAL OBSERVATIONS.—The sea on the whole of this coast is beautifully clear, and the bottom may be clearly seen in three to four fathoms when smooth. As several ships bound to the gulf have been wrecked a short distance below Ras al Hed, it is desirable to give a brief sketch of the coast immediately below it, chiefly from the report of Commander A. M. Grieve, I.N., and remarks of Dr. Carter, F.R.S., Bombay Medical Service.

From Ras Jibsh southward are the Beni Jenebeh, who have a bad character, and it would not be safe to land; above that point are the Beni Bú'Alí, who are civil to Europeans. There is nothing obtainable on this part of the coast.

Between Ras Jibsh and Masíreh island, the coast, which runs in a south-west direction, presents a range of low sandy downs; a heavy surf generally beating on the shore.

The **SOUNDINGS** are regular; the 20 fathom line is $3\frac{1}{2}$ miles off Ras Jibsh, increasing its distance from the shore to the southward; the 100 fathom line is 13 miles off that cape.

RAS JIBSH is a point about 100 feet high; the dark rock of which it is composed, is covered nearly to the top with white drift sand, three little dark peaks showing above it.

In clear weather, Jebel J'alán (3,900 feet) would be seen when off Ras Jibsh; it approximates to a tongue form, the high bluff towards the East. After passing Jibsh, Jebel Seyhah, forming a saddle hill when bearing W.N.W., and several hundred feet high, will be seen; also several other small hills near the coast, of which Jebel Jiffán is of round form.

From **RAS JIBSH** to **RAS AL KHUBBEH** the general direction of the coast is N.N.E. $\frac{1}{2}$ E. 53 miles, all low, sandy, and of an uniform desolate appearance; it is quite free from danger. Twenty-seven miles

from Jibsh is situated the village of Al Ashkhareh (or Lashkhareh),* containing about 1,000 inhabitants of the Beni Bú 'Alí tribe; they have several boats.

The **BANK of SOUNDINGS** decreases in width above Ras Jibsh, and at Ras al Khubbeh, 100 fathoms is only two miles from the shore, and 20 fathoms only one mile off, so that here the lead would be little guide.

RAS al KHUBBEH † is a low rocky point; here the sandy shore ends, and cliffs from 60 to 100 feet high extend with but a few short breaks, from this point to within 3 or 4 miles of Ras al Hed. In clear weather, the high mountains of Kalhát will be seen towering behind J'alán when 20 miles below this point. Jebel Kems or Kimis (2,700 feet) is a rugged peak of dark colour, and seen to the right of J'alán when off Lashkhareh.

RAS AL JINEËZ, the easternmost point of Arabia, is a low cliff; the soundings off it are as deep as at Ras al Khubbeh, and there is a depth of 800 fathoms only 5 miles from the land. From it Ras al Khubbeh bears S. $\frac{3}{4}$ W. 12 miles, and Ras al Hed N. by W. $\frac{3}{4}$ W. 7 miles.

JEBEL SAFÁNÁT ‡ (850 feet) two remarkable light coloured hills of equal height close together, are quoin shaped, with the steep side to the westward, standing on a table land (100 feet). Being isolated, and close to the east point of Arabia, they are very good land marks for that cape, and when the comparatively low land about them is below the horizon, they appear from the N. or S. like an island with a deep notch in it; they are visible above 30 miles.

RAS AL HED to RAS AS SHIJR.—RAS AL HED.—The low cliffs of Ras al Jineïz sink into a low sandy shore, 3 miles below this cape; which is a very low sandy point, with a few date trees in the little town of Al Hed lying 1 mile S.W. of it. The town consisted, in 1848, of two round towers and a number of mat huts, and contained about 700 of the Beni Ghazal tribe. It is subject to the Sultan of Maskat. The authority of that prince below this point is quite nominal.

* E.I.C. cruiser *Mercury* anchored off this place on 19th Sept. 1820; a boat was sent on shore, and the interpreter or pilot, who landed from it, was killed on the beach. The *Mercury* returned to Henjám, and on 2nd Oct. a small force, under Capt. Thompson, commanding the British troops in the Gulf, sailed thence, disembarked at Súr at the end of that month, marched against the Beni Bú 'Alí, and were totally defeated.

† In 1830, the *Oscar*, and in May 1852, the *Centaur*, English merchant vessels, were wrecked a few miles south of this cape; both were plundered by the Bedúin, who consider any ship coming ashore upon their coast as their property. No one in these ships was injured, and a boat belonging to the Beni Jenebeh took the crew of the *Centaur* to Maskat.

‡ Called also Jebel Fánús by Arab sailors.

SOUNDINGS.—To the north of the cape, no soundings are to be obtained, more than half a mile off shore ; to the east of it, the bank extends about 4 miles, and the 20 fathom line 1 mile from the shore : there is no danger on the coast between Ras al Hed and Ras as Shijr. Between Ras al Hed and Súr the 100 fathom line is at an average distance of 3 miles off the shore, and from a few miles above that place to 10 miles N. of Ras as Shijr the bank of soundings is only $\frac{1}{2}$ mile broad.

ANCHORAGE.—A vessel would best anchor with Al Hed town West, in 8 to 10 fathoms coral, $\frac{1}{2}$ to $\frac{3}{4}$ mile off shore ; this is quite exposed to all winds from the sea. The people of the town are civil, as is the case at all the towns N. of this. Bullocks and goats may be procured here, and indifferent water may be had abreast a small clump of date trees two miles to the southward.

The **CURRENTS** round this cape are variable and strong, and depend on the prevailing winds. It is high water, at full and change, at 9h. 30m.; rise and fall at springs 9 feet.

The coast changes its direction at Ras al Hed, to an average of W. $\frac{3}{4}$ N. 15 miles, to the town of Súr. Cliffs recommence 2 miles west of the cape, and extend uninterruptedly for 6 miles.

KHOR AL HEJREH is a small and shallow inlet, used by fishing boats ; its entrance, between low cliffs, is 2 miles W. by S. of Ras al Hed ; there are two fathoms in the entrance, shoaling gradually as you advance ; the inner half of the inlet is dry at low water. Its direction is South, for half a mile, and then East 1 mile, reaching close to the back of Al Hed village.

KHOR JERÁMEH, the entrance to which is one and a half miles west of the last, is a fine basin, with a tortuous entrance a mile long, and only 150 yards broad, between cliffs 60 feet high. Its length, inside, is $2\frac{1}{4}$ miles in a N.W. and S.E. direction, and breadth, one mile. The depths are 7 to 9 fathoms, mud, in the entrance channel, and 3 to 4 fathoms sand just within it, shoaling quickly to 2 and 1 fathoms as you advance. The southern shore is low, with a mangrove swamp.

Entering this place with a northerly wind, keep close to the Eastern side till past the little shoal (2 fathoms at low water) on the west side, a third of a mile within the entrance ; then keep in mid-channel, and pass on either side of a small island dividing the entrance (eastern passage preferable) ; and anchor as soon as past the island. The tide runs two knots in the narrow entrance ; and of course, flaws of wind are prevalent in it. It is used by native vessels as a harbour of refuge only ; as there is no village on its shore, nor is any water procurable.

RAS SHERH is a slightly projecting point of the cliff, 8 miles W. by N. of Ras al Hed ; from this point to Súr, there is a ridge of low broken hills with patches of cliff.

SÚR is a large town, or rather two towns, lying on a khor or backwater; there are also two forts, surrounded with huts, to the westward of it ; all included under the general denomination. The total number of inhabitants may be 10,000. When on with Súr creek, Jebel Kimis bears S.W. by S. this may be useful as a guide to find the place. Just north of Súr, the bank of soundings is only one mile wide.

A ship should anchor in 10 to 15 fathoms, sandy bottom, off the town ; it is quite an open roadstead, and has not been surveyed.

The largest town, on the east bank of the Khor, is called Hejáh, inhabited by the Beni Bú 'Alí, the other, Umm Kreĩnteĩn, by the Beni Jenebeh, who are often at feud with the former. Of the two forts, the south-western and larger, called Al Heĩs, is for the protection of the wells ; the other is called Seneĩseleh ; the country inland is partially cultivated, and there are many date groves. A large trade is carried on between this place and India, Zanzibar, and the Persian Gulf, in baghalahs ; it possesses, besides, numerous fishing boats. The exports are dried dates and salt fish, and they manufacture a coarse cloth for turbans, &c. Many natives of Kutch (Banyans) are settled here, and the trade is very much in their hands ; the Sultan of Maskat maintains a garrison in Al Heĩs. The Súr people are characterized by a spirit of enterprize, and are bold sailors.

The Khor is extensive, but narrow at the entrance, with a bar having only 3 feet at L.W., within it there are two or three fathoms ; cattle and vegetables might be obtained here, but it is doubtful if any water could be spared for a ship. Inland, two miles to the southward, is another town in a date grove with a good bazaar.

There is little to be seen of the town of Súr from the sea ; the two forts are on higher ground, and are first seen.

The COAST above Súr sweeps round gradually, till, at Ras es Shijr, it runs nearly N. and S., from which point, to within a few miles of Súr, the precipitous mountains Jebel Kalhát, and Jebel Beni Jábar extend close down to the sea. These mountains are in two ranges, one behind the other, both sinking into the plain together, just above Súr. When at a great distance to the northward, the south extreme of these mountains has been mistaken by strangers for Ras al Hed. They are of regular outline ; the coast-range averages 4,500 feet, the back range is higher, probably over 6,000 feet. Above Ras as Shijr they recede from the coast, ending at the Devil's gap.

KALHÁT is a little village, 9 miles north-west of Súr. There is said to be an anchorage for small craft quite close in, sheltered from northerly winds by a small projecting point. The anchorage for a ship would be very deep and close in. There is good water in wells; and bullocks, sheep, poultry, and vegetables are procurable, in small quantities, at this and the following villages.

TEIWÍ, a large village and date grove, 11 miles to the southward of Ras as Shijr, with a lagoon of fresh water 400 yards from the sea. There are many fruit trees. It contains about 400 men.

Off this place no bottom was obtained with 100 fathoms, a quarter of a mile from the beach. South of this place is an anchorage called Heiwí; there are no inhabitants, but limestone of fine quality is shipped thence for India.

GHEIL SHEHÁB, a small village with a tower on a little eminence, $1\frac{1}{2}$ miles north of the last, at the entrance of a deep chasm or wádi in the mountains. A fine stream of excellent water issues from the valley, and forms a lagoon within 50 yards of the sea, very convenient for vessels watering. The anchorage is in 20 to 30 fathoms, a third of a mile off shore. A vessel should weigh on the approach of a north-wester. Between this place and the next, is an anchorage called Makalla Aoubch, where native boats find shelter from a north-wester. Fenis, is a small village about half way between this place and Ras as Shijr; and Deghmer, another, a little north of the last: they, like the others lying at the foot of these hills, have good water, and fruit trees, &c.

RAS AS SHIJR, a bold point of low cliff, with a small village called Thebáb; this, and the two last villages have about 200 men each. Native boats find shelter from the north-wester under this point, but it must be very close in. The general direction of the coast between this point and Maskat is N.W. $\frac{1}{4}$ N. 51 miles.

MOUNTAINS.—The range Jebel Beni Jábar recedes from the coast, terminating abruptly in a great bluff, on the south side of the Devil's gap, about 22 miles W. b. N. from Ras as Shijr, and 12 from the shore.

North of the gap is another range of mountains (6,230 feet), extending N.W. and S. E. about 12 miles, of even outline on the summit, with one small peak; and ending to the N. and S. in bluffs, that at the south end of the range being very grand, falling in steps to the bottom of the valley or gap. It lies from 12 to 14 miles from the coast, and is called Jebel az Z'atarí, or Jebel Kerríyát. These two ranges are visible 80 miles; between them lies the great valley, known to seamen as the Devil's gap, and which natives call Wádi Heil al Gháf. When it bears W.S.W., it is

quite open, and forms a very remarkable landmark, although the gap is conspicuous from W. by N. to S.W. by S. Sometimes, when the mountain tops on both sides are covered with a streak of dark clouds, forming as it were a bridge over the gap, the sky is seen clear through underneath; which, in the evening, has a very remarkable appearance. Squalls, or heavy gusts, blow out of this valley in the winter months at times.

These with the next mentioned mountain are the land marks first made on this coast, unless in very hazy weather. If within the limit at which they are visible, it is recommended to look out when the sun is about setting, as the outline of these mountains will then often be visible for a short time; often only for a few minutes.

JEBEL ABÚ DÁÚD, (4,000 feet), is a detached mountain of irregular outline, deeply furrowed, and of light colour rising abruptly over the cape of the same name. Out at sea, the Jebel az Zatarí is seen over it. From a distance, when bearing N.W. $\frac{1}{2}$ W. it makes like an island, with a long slope on the inshore side, and steep to seaward; there being a wide valley between it and the back range. It extends 8 or 9 miles along the coast, and is visible 60 miles.

From Abú Dáúd to Maskat, there is a confused mass of hills near the sea, with range beyond range of mountains behind them.

SOUNDINGS.—Ten miles N. of Ras as Shijr the bank widens out, and opposite Kerríyát, is 3 or 4 miles wide; off Ras Abú Dáúd, 100 fathoms is less than 1 mile from the coast, thence to Ras al Kheirán, probably 7 or 8 miles; decreasing again to two and three miles, between the latter place and Maskat point.

The 20 fathom line is nowhere more than $1\frac{1}{2}$ miles from the shore, while, at Ras Abú Dáúd, Kheirán, and Maskat, it is quite close to the cliffs. There is no danger on this coast except a small bank of foul ground which extends about half a mile off shore at Kerríyát.

COAST above RAS AS SHIJR.—The mountains recede from the sea but the low cliff continues, trending to the N.W., till close to Kerríyát, when the shore becomes low and sandy.

KERRÍYÁT, two small villages about six miles apart, with a large date grove extending between them, on a sandy plain, intersected by water-courses, which, in rains, discharge the waters from the Devil's gap. The Beni Jábar are the principal tribe between this place and Kalhát; above this place are the Beni Batásh.

The northern village, which is three miles south of Ras Abú Dáúd, is called Kerríyát Kebíreh (or the large; the other being called As Saghíreh, or the small). It is close to the hills, and almost hidden in the date grove; a good mark for it is a rocky islet about 50 feet high, and

close to the beach. One of the watercourses runs round the north end of the grove, forming a small creek.

ANCHORAGE.—The best anchorage is in 12 fathoms sand, with the islet S.W., and Ras Abú Dáúd N.N.W. $\frac{1}{4}$ W., about $1\frac{1}{4}$ miles off shore. Supplies of cattle, fruit, vegetables, and water could be obtained here ; such supplies being also sent to Maskat from this place. Kerríyát Saghíreh lies at the south end of the date grove, and near a projecting low sandy point, $7\frac{1}{4}$ miles S.E. by S. from Ras Abú Dáúd. The foul ground before mentioned, begins at this point, and extends two miles along shore to the northward, not above half a mile off shore ; it has not been sounded.

A white fort, $1\frac{1}{2}$ miles from the low point, will be seen on a small mound above the trees, and indicates the position of the village. These two villages contain about 1,000 men of the Beni Sinán tribe. When near this part of the shore, a low range of hills or undulating ground is seen between the coast and the Devil's gap.

RAS ABÚ DÁÚD is a steep rocky point, and has a rocky islet about 100 feet high, 300 yards north of it, with a channel between it and the cape, of 3 to 4 fathoms. The coast for two miles S. of it is rocky, and forms several points. The exact point is not easily made out, unless quite close in. Small vessels would be sheltered in a north-wester in the little bay just S. of the cape ; but would not be able to get out, if a south-easter came on.

The coast, for four miles north of the cape, is formed by cliffs, extending N.W. $\frac{1}{2}$ W., the mountain, Jebel Abú Dáúd, rising abruptly from them ; after which the coast is low sand, as far as Sífet, the mountains receding from the coast, and leaving a space of level land between them and the shore.

SÍFET is a square tower on a mound about 60 feet high, and date grove, near the sea, $10\frac{1}{4}$ miles N.W. of Ras Abú Dáúd. A range of rugged precipitous hills extends along the coast, from this place till six miles beyond Maskat, the coast line being very irregular and almost entirely cliffs, with little sandy bays at intervals, and numerous inlets or coves.

RAS AL XHEIRÁN, a perpendicular cliff, about 60 feet high, of light colour, as are also the hills above it, is 15 miles N.W. $\frac{3}{4}$ N. from Ras Abú Dáúd, and projecting two or three miles beyond the general run of the coast, from that place to Maskat. There are four little sandy bays to the southward of this point, of which the one close to it forms a cove half a mile deep, with 3 fathoms in it and open to the N.E. : a rocky peninsula, forming its east side, is called Ras Kazaikzan. The next bay is

insignificant; in the third there is a grove of date trees, Khaisat, or Sífet as Sheikh; the last little bay is called Khaisat as Sum.

BANDAR KHEIRÁN.—Immediately westward of Ras al Kheirán are two islands, not easily distinguished, owing to their uniformity of appearance and height with the mainland, and to their not projecting beyond the line of the coast. Behind the western, and larger, is the anchorage called Bandar Kheirán.

The smaller island is $\frac{1}{2}$ a mile long, and the channel behind it only 200 yards wide, tortuous and very shallow; although at the entrance it has 3 to 5 fathoms. The western island (300 feet high) is steep and rocky, and three quarters of a mile long; close to the east end is a small detached rock, between which and the eastern island is the entrance channel, 600 yards wide, with 15 fathoms in it. The straits between the south side of the island and a projecting point of the coast opposite form the anchorage, which is 150 to 200 yards wide. There are 4 to 5 fathoms in this part; off the S.W. corner of the island it is wider, and has a rocky islet in the centre, with 6 to 7 fathoms on its east side, and 3 to 4 round it.

Near the south end of this islet, a narrow passage leads into a shallow bay, extending a mile to the southward, where it ends in a swamp. There is a large grove of date trees and a small village. The western entrance is about 150 yards broad, half a mile long N. and S., and has 9 to 7 fathoms in it. This harbour is only frequented by fishing boats; the winds are very baffling, particularly in the western entrance, and blow in violent gusts during north-westers.

YITÍ, a small sandy bay, with a little fishing village and a few date trees in the valley, $4\frac{1}{2}$ miles W. by N. $\frac{1}{4}$ N. from Ras al Kheirán; from this bay to Kheirán the coast is rocky cliff.

BUNDUR JISSEH is another small anchorage 5 miles S.E. $\frac{3}{4}$ S. from Ras Maskat, formed by a precipitous light-coloured island, 600 yards long and 140 feet high, which stands in the entrance of a bay $\frac{3}{4}$ of a mile in length and depth. The eastern entrance is 300 yards broad, and has seven fathoms in it, the western one is blocked up by a flat rock having only $1\frac{1}{2}$ fathoms on each side of it. The bay has 4 to 7 fathoms in it, and an indented outline, with an islet on the S.W. side, to the west of which is a large village and date grove.

The coast is rocky between this and Yití, and there is a succession of rocky points and sandy bays, with several villages, between it and Maskat. Bistân, the southernmost of these villages, has a date grove; the inhabitants are cultivators. Kantab, a small fishing village, has a pyramidal rock standing in the sandy bay close to the shore. This place lies under the hill called Maskat saddle.

SUDÁB, a small village in a cove which might afford shelter in a north-wester to small craft; it is separated from Maskat by a small ridge, having a wall and gate in the pass; there is only a footpath between the two places; the coast on both sides of this place is a mass of rugged hills with cliffs near the sea.

The remarks on the coast from Ras al Hed to Sudáb are partly from the report of Lieut. A. Grieve, I.N. 1849.

CHAPTER V.

ARABIAN COAST, GULF OF 'OMMAN. MASKAT TO SELLÁMEH WA BENÁTHA, OR THE QUOINS.

Variation $0^{\circ} 40'$ to $1^{\circ} 16'$ West in 1864.

MASKAT is the capital of 'Omman, and residence of the sultan or king, whose territories extend along the coast from Ras Musendom to Ras al Hed. Including the adjacent villages and towns, from Sudáb to Matreh, it may contain about 60,000 inhabitants; but this is merely an estimate.

On the death of the late sovereign Syud S'aid bin Sultan, the kingdom was divided; his son, Syud Saweyní succeeded him in 'Omman, whilst the African territories (Zanzibar, &c.)* went to another son, Syud Burgash. The ruler of Maskat is properly called Sultan. The extent of his dominion in Arabia is practically limited by the distance at which he can enforce his authority, which, in general, is only near the sea-coast; he has a small regular force of Arabs, Mekránís, and Sídís (Africans), who garrison his forts and Persian possessions; they are only armed with matchlocks, swords, spears, &c. He has lately obtained a few field-pieces and some artillerymen from the Persians. In addition to his Arab possessions, he holds the islands At Tawíleh and Hormúz, and the Persian coast from Khamír to Jashk, of the Persian Government, on payment of a tribute: he also holds Gwadel, and several places on the Mekrán coast between that and Jashk.

The fleet of the late sovereign was divided between Zanzibar and Maskat. The present Maskat squadron consists of an old-fashioned 36-gun frigate, one or two corvettes, and a few brigs, armed baghalahs, &c.

His revenues are much curtailed by the loss of Zanzibar, and the kingdom appears to suffer from civil commotions since the death of the late ruler.†

* Zanzibar is often called by the Arabs Saheili.

† Maskat was in possession of the Portuguese from the beginning of the 16th century to 1648, when they were expelled from all their possessions in Arabia by a simultaneous revolt of the Arabs. They fortified the place strongly, and built the forts Jillálí and Merání; probably the others also are, in part at least, of Portuguese origin. In a Portuguese inscription over the inner gate of Merání is the date 1588, and in an old wooden gate at the custom house, is cut "Anno 1624."

The whole of the fortifications, both landward and seaward, are in a very dilapidated state; the guns are chiefly Spanish and Portuguese, the iron ones quite rusty and useless, and the carriages dropping to pieces. A few brass guns are in better condition; one fine old Spanish gun in Merání fort has the date 1606.

The Maskat Government has treaties with Great Britain, France, and the United States. The late sovereign was a faithful ally of Great Britain, and fought with us against the pirates, &c. Maskat pays a religious tribute, or tithe, to the Wahebbí chief. The population of Maskat and Matreh is very mixed, with a large infusion of African blood. Kalbúh, Ríyam, and Arbak are inhabited by a higher class of Arabs. At Kalbúh are the Bení Marázik; at Ríyam the Bení Ahmed; Shateíf, Mateíreh, and Sudáb villages are inhabited by fishermen.

Supplies.—Notwithstanding the barren appearance of this place, the country inland is in many parts fertile, and furnishes considerable supplies. The following articles are obtainable: firewood; water;—this latter is brought from the wells in the suburbs, in a small aqueduct, by the side of the great watercourse, to the landing-place, and brought off in native boats; if a vessel has no casks, they would bring it off either in bulk in a boat, or, perhaps, in one of the large wooden tanks used by baghalahs, but it is advisable to see that the tank has been cleaned out properly. Occasionally, after a long drought, the water is scarce and bad; but, as a rule, good, and in sufficient quantity;—sheep and cattle (the latter are best); vegetables; fruit, viz., limes, oranges, grapes, pomegranates, mangoes, plantains; fowls, plentiful and cheap; flour, all ground in hand mills; Arab bread; rice and dhol (Indian pea), which come from India; and the usual other articles required for a ship, excepting spirits, salt meat, and biscuit. No coal is obtainable here; but the Indian Government generally has a few hundred tons here for the use of their own vessels.

British Agent.—There is an agent here, hitherto a native; but an European officer, with the rank of vice-consul, has been lately appointed. Price currents, rate of exchange, &c., which vary much, would be obtainable from him. There was a French agent here till recently, but the authors are not certain whether there is one at present.

Currency (see Introduction).—The dollar is the coin preferred. The rate of exchange is settled by the Banyans, of whom more is said below.

Trade.—The exports are: corn, brought from the opposite coast of Persia, and mules and asses from the interior, which are sent to the Mauritius and to Bourbon; salt is exported to Calcutta, also dried fish, and shark-fins, &c., for the Chinese market; dates are exported to the Malabar coast, Kutch, &c.

The imports, on which 5 per cent. duty is levied without distinction, are : sugar from the Mauritius ; from India : piece goods (from Bombay), large quantities of rice, and some teak timber (from Malabar), indigo (from Calcutta), ghee (from Karachi and the Mekrán coast), cotton and native fabrics (from Kutch), coffee, &c., from the Red Sea. There is also trade with Zanzibar and the African coast. There is a large number (several thousand) of Hindús, of the Banyan caste, settled here, chiefly from Kutch and Gujerát, and the trade is much in their hands ; they have always been encouraged by the Maskat Government. The customs are farmed to some of these men for a certain annual sum. They only settle here temporarily, and do not bring their families with them. A small colony of these enterprising men is to be found in most towns of the coast of Arabia. The manufactures are few : certain kinds of cloths, used by the Arabs, are woven, and arms, as swords, matchlocks, &c., made here.

There are several fine square-rigged ships belonging to this port, besides a great many baghalahs and other native craft.

MASKAT COVE is the eastern of five coves, lying between Ras as Shateif and Ras Maskat, a distance of only $1\frac{3}{4}$ miles. It is formed by the steep rocky island called Maskat, and a smaller one, on the east side ; and a high point of land on the west.

Maskat island, 350 feet high, and precipitous all round, is 1,400 yards long, by 200 to 500 broad : it has deep water close to outside ; 30 fathoms at 2 cables off. Its coast line is very irregular, and, one-third from the south end, it is nearly divided by two little coves opposite each other, the hill being quite low just between them. The northern point of the island, called Ras Maskat, is a round sloping bluff, while the points to the westward of it are cliffs. On its west side, just within the cove, is a fort or battery, near the water, with a tower half-way up the hill, called Síreh.

Off the north point lies Fisherman's rock, 10 feet above water, which is 20 yards across, and separated from the island by a strait 50 yards broad, with 2 to 3 fathoms in it : this rock may be rounded quite close, as 5 yards off it there are 6 or 7 fathoms.

The cove is three-quarters of a mile deep, N.N.W. and S.S.E., and half a mile wide at the entrance ; half-way in, it is contracted to a quarter of a mile, by a projecting point running out East and West, on the west side, inside which it widens ; at the head, it is 300 yards across. The soundings are 12 and 13 fathoms in the entrance, shoaling gradually to 7 and 8 at the narrow part, and to 2 fathoms about a cable from the white sandy beach at the head of the cove, on which the town stands. There is deep water close to all the points round the cove ; the little bays in it are shoaler.

The west side is a detached precipitous ridge, 436 feet high; its north point is called Ras Kalbúh. The projecting point mentioned above, is 250 yards long by 60 broad, and about 100 feet high, being a spur of the main ridge of Ras Kalbúh, and on it is a fort, with two rows of embrasures, and a round tower on the highest part,—called also Síreh (or Síreh al Gherbí, i.e., the western, if required to distinguish it from the other). On the inner side of this point is formed a bay called Makalla, with 3 fathoms and under, where the small native vessels anchor. There are several low towers on the different peaks of this ridge, which slopes down at its southern end to a cliff about 150 feet high, with a large fort on it, called Merání, with several round towers on the hill, and a battery near the water level.

This fort is at the bottom of the cove, and close round it, on the south side, is the landing place, which is on the rocks, just where the great watercourse discharges itself into the cove; here also, is a small place for hauling up, and repairing boats.

The front of the town occupies the bottom of the cove, and is built close down to the water, along the beach, so that the sea washes against the houses at high water. The walls of the town enclose a space of 700 yards by 250, while the suburbs, built of mat huts, occupy every available piece of level ground in the vicinity. The wall is built on the west and south sides, the east, and part of the south side being built close up to, and even against the face of the hills. The sultan's palace is the largest building facing the sea, and to the east of it is a small wharf with the custom house. The mosques are small, and, like all the mosques in 'Omman, have neither domes nor minarets. There are several towers on the hills behind the town, one of which, called Búma Sali, built on a ridge, (highest part 500 feet,) quite overlooks it and the cove.

Between the town and Maskat island are two small detached hills, the southern of which, about 100 feet high, is joined to the town by a low sandy isthmus, and has a large fort on it, called Jillálí, which has two tiers of embrasures, both casemated, and a round tower at each end; there is a fine flight of steps cut in the rock up to this fort. This and Merání are the two principal forts, and quite overlook the town. The other hill forms an islet at high water, about 60 feet high, with a passage, with only one foot at low water, and 30 yards wide, between it and Maskat island, called Doweíreh. Behind these is a cove, or series of little coves, between Maskat island and the main; there are two remarkable natural pillars of rock in it, one close to the S.E. tip of the island, the other half a mile to the southward; just below the latter, is a projecting point called Ras Jen'adeh, a perpendicular cliff about 250 feet high, conspicuous from the northward.

In one of these little bays, called Moghub, close to the south-east of Jilálí fort, the Red Sea and Karachí telegraph cables were landed.

TIDES.—In Maskat cove it is high water, full and change, at 9h. 15m., and the rise and fall is 6 to 8 feet (approximate).

DIRECTIONS.—Approaching Maskat from seaward, if from the eastward or westward, the Saddle hill, 1,340 feet high, is remarkable; it is formed by two sharp peaks, the highest of the very jagged, dark range behind Maskat; they are in one when bearing E.N.E. or W.S.W. From the northward this hill is not so conspicuous, as the peaks are some little distance apart. In the background will be seen, in clear weather, the Kerriyát range of mountains, and, to the westward, the mountains Jebel Tyín and Jebel Nakhil, with lower ranges between them and the coast range. The place has often been passed by strangers, especially steamers, as the towns do not show well under the dark hills, and, lying at the bottom of coves, are only visible with the cove open. As there is no danger on this part of the coast, steamers especially, should not be far out, and then Fahil island cannot be overlooked.

This islet, 280 feet high, is of light colour, quite precipitous, deep to all round, and has no danger near it; it generally shows light coloured against the land. From the eastward, when the sun is shining on Jilálí fort in the morning, it sometimes shows white, to the southward of Maskat island against the hills behind; all the hills about Maskat being of a very dark colour.

In the day time a ship would run into Maskat cove, and anchor well over to the west shore, which is the weather side in a north-wester. If only calling at the place, she may anchor in 13 or 14 fathoms in the entrance; but if requiring supplies, &c., it is advisable to anchor, if there is room, about abreast of the western fort called Síreh, and pretty close to it. The sultan's ships of war lie further in.

The place is nearly open to the north-wester, which blows a couple of points off the west side, while the sea sets straight into the cove; so that vessels making a long stay here, always use a stern anchor, to keep their head on to the swell. The north-easter, or Náshí, also sends a heavy sea into the cove, and there is little or no shelter from this wind. The bottom is sand and shells, but, with a long scope of cable, vessels need not apprehend driving, as the anchors would have to drag so much up hill; and, when near the rocks, there appears to be a rebound of the wave, which lessens the strain on the cable. Outside the cove, in depths above 20 fathoms, the bottom is clay or mud.

As the wind nearly always blows into this cove, vessels generally have

to warp out, till able to make sail, but there is often a light land wind at night, sufficient to enable a vessel to get out.

By night, a vessel arriving from the eastward should run up the coast, keeping to the southward of the parallel of Ras Maskat, or make short tacks up to it, so as to be sure of not passing it, as it will then form the extreme of the land; and she should remember to round the *first* point, and as close as possible. Fisher's rock would be seen, probably, by its horizon being lower, or as a notch in the water line of Maskat island; after rounding it, keep a look-out for the shipping, and anchor in the mouth of the cove, well over to Ras Kalbúh, which by night always appears much closer than it really is.

From the westward or northward a vessel should make Fahil, and take a departure thence; the course and distance to Fisher's rock is S.E. by E. $\frac{1}{4}$ E. 6 miles. Remember, however, that Ras Maskat will be the last point, and nothing will be seen to the eastward of it.* The shipping does not show well against the hills, particularly by night, but, when close, their hulls might be seen, especially from aloft.

The four other coves are called after the towns situated in each: Kalbúh, Ríyam, Matreh, and Shateif.

KALBÚH is a small cove between Ras Kalbúh, before described, and a point with an isolated hill, about 100 feet high, with a round fort on it. It is 3 cables long by $2\frac{1}{2}$ broad, with 8 fathoms in the entrance, and shoaling gradually up to the town; is quite open to the prevailing winds, and not frequented by shipping. There is a spit of rocks, covered at high water, extending $1\frac{1}{2}$ cables W.S.W. from Ras Kalbúh.

In appearance the town resembles Maskat on a smaller scale. It extends a quarter of a mile back up the valley, from the sandy beach, and nearly joins the suburbs of Maskat, being separated from them by a low ridge, over which the footpath passes. There is a wall and gate to cut off the communication. The hills on the west side of Kalbúh are about 250 feet high, and are, like Ras Kalbúh, nearly detached from the main range of hills behind.

Between the isolated hill forming the west point of Kalbúh cove and this ridge of hills, is a sandy isthmus, on which is a little village called Doheh, with some stone houses; a part of the village is detached, and lies a little back in the hills to the west of the point.

RÍYAM COVE is about the size of the last, with soundings decreasing from 5 fathoms. It is not visited by vessels, being also open to the prevailing winds.

* In 1857, a steamer, not attending to this, got on the rocks in Kalbúh cove, which she had entered at night, taking it for Maskat cove.

Between this cove and Doheh a small spit of rocks runs off half a cable. Ríyam village is smaller than Kalbúh, and extends a quarter of a mile up the valley, whence there is a footpath for a quarter of a mile, over a fortified pass, to the suburbs of Maskat; to the west of the village is a steep and rugged pass to Mateïreh and Matreh. The west point of Ríyam cove is a detached hill, about 80 feet high, quite precipitous, and having a sunken rock 70 yards off, to the northward of it; to the westward of this point is a bight, used by small native craft in a north-easter, and sheltered partly in a north-wester by Ras Kowáser; it is called Bandar Denákí or Dinája.

MATREH COVE, half a mile broad, and 6 cables deep, is between the west point of Ríyam cove and Ras Kowáser. It contains several little bays and villages, besides the town of Matreh, which stands at the head.

Next to westward of Bandar Dinája is a small sandy bay, with a large village called Mateïreh,* extending back some distance. A detached hill, about 100 feet high, with a large castle on it, called Síreh† Matreh, separates this village from Matreh; there is a footpath round inside this hill to that place, which is nearly connected with Mateïreh.

Matreh is a town about the same size as Maskat, and, inside the walls, well built. It has a front of nearly half a mile, along a fine sandy beach at the head of the cove. The only pass from Maskat into the interior by land is from this place, which is fortified on the land side, where the hills are not inaccessible, by a wall and towers; there are also many detached towers on the hills round the town.

The communication by land with Maskat, which is very rugged, is through Mateïreh; and thence either to Ríyam and Maskat (see Ríyam), or from Mateïreh to Maskat direct by a very rugged steep pass. These paths are not practicable for loaded animals. Everything is sent between these places by sea in large canoes; and, if not blowing hard, the general mode of transit is by boat. Large numbers of these canoes ply regularly between Maskat and Matreh, most of the merchants of the former place residing here. This town is under a wálí, or deputy of the sultan. The Khojeh sect have, inside the town, a separate fortified quarter, containing about 500 houses, into which none but Khojehs are admitted.

At thirteen hundred yards south of Matreh castle is a remarkable, sharp peak, called on the chart Matreh peak, the highest on that range.

On a projecting rocky hill, about 60 feet high, forming the north point of Matreh bay, is a small fort, and in the sandy bay on the other side of

* i.e. Little Matreh.

† Síreh means a fort on a hill over the sea.

it, lies the town of Arbak, which has a tower and wall separating it from Matreh in the pass behind the hill. There is another small fort on a hill immediately north of Arbak.

RAS KOWÁSER, a precipitous point about 200 feet high, has a rocky ledge, on which are several detached high rocks, extending $1\frac{1}{2}$ cables off it, and a low islet a cable north of it.

ANCHORAGE.—Matreh cove affords good shelter in a north-wester, but is open to the Náshí, or north-easter. The larger native vessels always anchor in this cove in preference to Maskat, but square-rigged vessels seldom use it, always going to Maskat. The anchorage is close under the shore, between Ras Kowáser and Arbak. The landing-place at Matreh is at either end of the sandy beach; in a north-easter the best place to land is on the rocks just at the north end of the beach.

SHATEÏF COVE, the last of the series of coves about Maskat, is small, open to the north-easter, and is never used by shipping. The little village is insignificant. There is a footpath through the hills to Arbak. On the north side is a high ridge, about 350 feet high, which ends in the perpendicular bluff called Ras Shateïf; it has 20 fathoms only $1\frac{1}{2}$ cables off.

MASKAT to SÍB.—**ASPECT OF COAST.**—From Ras Maskat to the end of Síb date-groves, a distance of 25 miles, the bearing is W. by N.; the coast, from a point 6 miles west of Maskat, falling back in a sandy bay called Ghúbbet al Heil; the point being called Ras al Hamar, or the red cape. The hills here recede from the sea to the south-west, increasing in height till they culminate in Jebel Tyín, 5,250 feet high, 20 miles from the cape; they are not remarkable in form, but one of the lower mountains of the range, about 4 miles from the shore, is of white colour.

There is a great valley, called Wádi Sumayel, between this range and the Nakhl range, 7,740 feet high, which lies in a N.E. and S.W. direction on the west side of the valley: it has four principal peaks, one of which, Jebel Nakhl, 7,000 feet high, is singular in form, like a pepper box on the top of the mountain; it is seen off Maskat, but afterwards gets shut in behind the other peaks, and is not again seen till near Birkch: these mountains are visible 90 miles.

SOUNDINGS.—There is no danger on the coast; off Maskat the bank of soundings is not more than 3 miles wide, but it widens to the westward, and is about 15 miles broad at Síb. The 20-fathom line runs from Ras Shateïf nearly straight to Fahil islet, and thence is about 3 miles off shore till near Síb, where the flat, near the edge of which the Deïmáníyeh islets lie, begins. The bottom is mud and sand, above 20 fathoms, chiefly mud.

DARSEÏT.—From Ras Shateif the cliffs run about west for a mile to Aient and Darseit, two little villages in small sandy bays. The latter is the western, and larger, and has several towers; both are inhabited by fishermen, and communicate, by footpaths through the hills, with Shateif and Arbak. Close to the westward of Darseit is a remarkable red hill, on the shore, about 400 feet high, forming in two paps, with cliffs at the base.

RAS AL HAMAR* is a point of cliffs, about 150 feet high, of red colour, $3\frac{1}{2}$ miles W. $\frac{3}{4}$ N. from Ras Shateif; and there is a sandy beach, $1\frac{1}{4}$ miles in length, between it and the Paps near Darseit. A sloping point, close to the westward of it, is called Ras al Abyath (or the white point), from its colour.

FAHIL ISLAND, already noticed in page 49, lies 2 miles off Ras al Abyath. It is one-third of a mile in length; there is a clear passage between it and the main, with 10 and 12 fathoms, deepening to 20 close to the island. This island can be landed on, and ascended, only on its south-west corner, the cliffs overhanging all round. It is visited by Arabs, in search of hawks' nests:† the bank of soundings is probably only 3 or 4 miles wide, outside the island; which is visible 18 miles.

BÁTNEH COAST.—From Ras al Abyath the coast falls back, and forms the bay called Ghúbbet al Heil, which has a low sandy shore, with sand-hills and date-groves in places. From the little creek one mile S.W. of this point, where the cliffs end, the Bátneh (*i.e.* level) coast begins, extending for 150 miles to the neighbourhood of Khor Kelbeh, with an average width of about 12 miles; it is well cultivated, with date groves almost the entire length, and many towns and villages.

The whole of this coast is free from danger, excepting the Deimáníyeh islands, and has no harbours, or even creeks, that will admit anything but the smallest boats. It is quite open to the Shemál and Náshí; for the latter it is a dead lee shore; and consequently all the trade with Maskat is carried on in small boats, which can be hauled up in bad weather.

A vessel visiting this coast, would be able to obtain cattle, poultry, and vegetables at all the towns. *Water*, though plentiful, would be tiresome to wait for, unless she used her own boats. It is obtained from wells, often sunk only a short distance from the beach. Firewood only in limited quantities. Quantities of dates, which are very fine, are exported from this coast.

* The Red cape.

† The Arabs are fond of the sport of hawking, and most of the chiefs keep a few of those birds.

KHÚWEÏR is a little creek, about one mile south-west of Ras al Abyath, where a large watercourse discharges itself; there are a few huts there, and mangrove trees are cut for firewood.

KHALEÏL is a small village, with fort and date-grove, the first in the Bâtneh district, about 3 miles from the commencement of the sandy shore.

HEÏL is a little village on the coast, to the south-east of Síb; the date-grove extends continuously from this place till 2 miles beyond Síb.

SÍB, a scattered town with two small detached forts: it is chiefly built of mat huts, and several boats belong to it. There is a bazar, and also extensive date plantations and many gardens. Supplies are sent hence by boat to Maskat. The anchorage, three-quarters of a mile off shore, is in 5 fathoms, sand, quite open to the prevailing winds. It is frequented in the summer by visitors from Maskat, who erect temporary houses. The ruler of Maskat is often here for change of air, being healthier and less hot than Maskat, as it is more open to any breezes. It is governed by a wálí or deputy.

SÍB to SAWÁDÍ.—ASPECT of COAST.—Sawádí point is $45\frac{1}{2}$ miles W. by N. of Ras Maskat. After passing Síb, the great bluff of the Jebel Akhthár, 9,900 feet high, will be seen; it is visible 110 miles, and has been seen to go down below the horizon in very clear weather, when 115 miles distant; it has two steps on the top, the north face appearing nearly precipitous, and the top sloping gradually from the steps to the westward; there are lower ranges between it and the sea.

The coast continues low and sandy, projecting a little west of Síb, with date-groves nearly all the way. The Deimáníyeh islands are in three groups, and lie nearly parallel to the coast, at about 8 miles distance.

SOUNDINGS.—The bank of soundings extends 5 or 6 miles to the northward of these islands; the bottom is mud and sand inside the islands, and chiefly mud, above 20 fathoms: the soundings inside of them are regular, and, except the eastern group, under 20 fathoms. The only irregularity on the coast is off Ras al Gháf: the coast bulges out 5 miles above Síb, and there is a space of 4 miles without any date trees near the shore, with sand-hills a little back from the beach. At the most projecting part are two large gháf* trees, and $1\frac{1}{3}$ miles off this point is a sand-bank with not less than 3 fathoms on it, and $4\frac{1}{2}$ inside it. Between this and Sawádí point the coast forms a bay, in which is the large town of Birkeh.

BIRKEH.—The fort of this town bears S.E. $\frac{1}{2}$ E. $7\frac{1}{4}$ miles from Sawádí point, contains few houses, and is dilapidated; in the centre is the sheikh's

* "Acacia;" hence the name of this point.

castle, a lofty Arab fortress, which is visible 10 miles, and strong for such a building. It has no ditch, there are four large flanking towers at the angles, and a narrow winding entrance, with a strong iron-cased door; many pieces of unserviceable iron ordnance stand in front of the gate. The rest of the town, consisting chiefly of mat huts, extends for 3 miles along the shore, in the date plantations which line the coast from near Ras al Gháf.

The country is well cultivated near the town. This town, like Sib, is under a wálí; large quantities of a shell called dok, resembling a cockle, are collected here, dried in the sun, and sent into the interior. There is a large bazar, and some Banyans are settled here.

The Anchorage would be in 5 fathoms, 1 mile from the shore, sandy bottom. The soundings decrease regularly, the water is clear, and the bottom may be seen in 4 fathoms.

SAWÁDÍ ISLANDS.—Sawádí point is low and sandy, with a sand-hill; the date-groves do not come within $1\frac{1}{2}$ miles of the point. Off it lies the group of islands called Sawádí, which consists of one large islet, and six smaller ones, extending $1\frac{3}{4}$ miles E.S.E. and W.N.W. The largest (and eastern) islet, 280 feet high, is three-quarters of a mile long, E. and W., and a quarter of a mile broad; it is table-topped, has cliffs all round to seaward, and is visible 18 miles. On its west side is a little sandy bay. It is separated from the land by a strait, a quarter of a mile wide, and fordable at low water.

The other islets are all precipitous, from 50 to 150 feet in height; the southern and largest of the six, only one sixth of a mile long, has a tower on it, built to protect the anchorage in the pirate times; between this (tower islet), the large islet, and the shore, is a small boat harbour, about a half a mile in extent, with 2 fathoms close to the south side of the tower islet, where native vessels anchor, partly sheltered from the prevailing winds. This little place is crowded with boats in the date season: the entrance is close round to the south-westward of Tower islet.

A small vessel might anchor close on the south-east side of the great islet, in 4 fathoms, sheltered from the Shemál; but in the winter she would be embayed if a north-easter came on. There is no danger outside these islands, and there are 4 or 5 fathoms quite close-to; the bank of soundings outside them is not more than 9 miles broad.

Water.—There is a well of good water on the beach, about a mile to the westward of the Sawádí islands.

DEİMÁNÍYEH ISLANDS, called by Arab seamen also Sab'a Jezáyir,* are all quite barren, and there is no water on any of them. They are

* The seven islands, seven being a favourite indefinite number.

frequented by fishermen from the mainland, who come over in small boats called *beddan*, and catamarans called *shásheh*, made of date-stalks.

The eastern of the three groups, named *Kharábat*, consists of one islet, a quarter of a mile in length, and several detached rocks; it has a reef on its north and east sides, extending about half a mile off; and 20 fathoms within a quarter of a mile. Its highest part, about 25 feet high, is visible 8 miles; it has black rocky points, with white sandy beaches between, which might show at night; the other islands, as far as *Sawádí*, can be seen from it, also the coast immediately opposite. The bank of soundings extends only about 4 miles outside this island: there are 22 fathoms close inside it, shoaling gradually towards the main. The channel between this and the centre group is 3 miles wide, and quite safe, with 20 fathoms and upwards all across.

The centre group, called more particularly *Deimáníyeh*, extends nearly East and West, $3\frac{2}{3}$ miles. It consists of seven islets of different sizes, in a row, with some detached rocks. Their height is from 30 to 40 feet, and they are visible 9 miles. There is no danger near this group, which is steep-to, with low cliff, of light brown colour, and difficult to see at night. The western, and largest, has two little hills with a valley between, and is three quarters of a mile long by a quarter broad. There are said to be three clear channels through them: there are not more than 14 fathoms between this group and the shore. If passing inside, the soundings would be no guide approaching them. One mile off the north side there are 30 fathoms, and no bottom at about 4 miles off. The channel between this and the western group is 4 miles wide, with 20 fathoms in it, and quite clear.

Jezíret Jún, is the name given to the western group. It consists of one islet, and three rocks above water, extending in a straight line East and West $1\frac{1}{2}$ miles. The large islet (107 feet high, near the west end) is three quarters of a mile long, and very narrow: it is of light brown colour, and difficult to see at night; by day it is visible 12 to 13 miles.

On the south side of *Jún* great island there is tolerable anchorage in 8 fathoms, sand, opposite a small sandy beach, a quarter of a mile off shore, and sheltered from the prevailing winds, though there would be much swell rolling round the island in a strong breeze. Half a mile south of it is a 6-fathom bank, with 9 between it and the island.

Off the western little islet, a 2-fathoms spit runs 300 yards in an E.S.E. direction, or nearly towards great islet. The depth inside *Jún* islands is 14 fathoms at three-quarters of a mile off, decreasing towards the main. Between the sunken patch and *Sawádí* islands, there is a clear passage of $8\frac{1}{2}$ miles, with 18 to 20 fathoms.

Four and a half miles north of Jún there are 50 fathoms, and 20 fathoms are $1\frac{1}{2}$ miles off.

NINE-FEET PATCH.—Nearly $1\frac{1}{4}$ miles N.W. by W. $\frac{1}{2}$ W. from the high part of Jún is a detached sunken patch, a quarter of a mile across, least water 9 feet, with masses of coarse coral rock, and 20 fathoms within a quarter of a mile on the north side; there are 18 fathoms between it and Jún, and 14 fathoms a quarter of a mile to the southward. This patch shows plainly from aloft, when the sun is behind the vessel.*

TIDES.—It is high water, full and change, at the Deimáníyeh islands, at 9h. 15m., and springs rise 10 feet.

ASPECT of COAST.—The whole of the coast from Sawádí to Khor Kelbeh is low and sandy, and quite free from danger. It is little visited by Europeans. There are many towns and villages, and the date plantations are almost continuous close to the sea. The coast would not be seen more than 9 or 10 miles; its general direction alters gradually from East and West, to North and South at Khor Kelbeh.

The great range of mountains appears to be continuous from the Jebel Akhthár to the entrance of the Persian Gulf; it is visible from the sea its whole extent, and gradually approaches the coast to the northward, leaving only a narrow plain opposite Khor Kelbeh.

SOUNDINGS.—The survey of this part of the coast is very imperfect. On the old chart† the soundings are laid down much too far from the shore. The 100-fathom line is 9 miles from the coast at the Sawádí islands, increasing to 18 off Khor Kelbeh; the soundings appear to be quite regular.

AS SÚEÏK, the first town of any size, is 20 miles W. by N. from Sawádí island. A part of the town is walled round, and it has a large fort in the centre; there are also many huts without the walls. It is under the wálí of Birkeh, and has a garrison of the sultan. There is a bazar here.

Between this place and Sawádí are six villages, of which Mesn'ah, 9 miles west of Sawádí, has a large fort.

KHÁBÚREH is a town 20 miles to the north-west of Súeik. At 25 and 20 miles to the south-west of this place are two hills, which are conspicuous as landmarks: a high bluff quoin-shaped hill, about 3,000 feet high, and, on the lower jagged range, an Asses Ears peak. Four or five small villages will be seen between this and Súeik, and, to the northward,

* E. I. C. sloop *Clive* grounded on this reef in 1858.

† Battnah or Burka coast, $d = 13.2$. Brucks and Haines, I. N. 1828.

between it and Sohár, there are eight villages, of which Saham is the largest.

SOHÁR.—This large town, 67 miles from Sawádí, is under a wálí, and contains 4,000 or 5,000 inhabitants. A conical peak, 1,550 feet high, $12\frac{1}{2}$ miles W. by S. $\frac{3}{4}$ S. of the town, is a good mark for finding it. The peak is of light colour, and stands in the plain, some distance in front of the back range of mountains; by its bearing, it would indicate the whereabouts of the town, long before the low shore was in sight. The town is walled, with a high fort in the middle, the residence of the sheikh, which is seen after all the date-trees are below the horizon, or about 12 miles. There is a moat round the town, and a large bazar. Many mat huts are built along the beach, in the date-groves outside the walls. In the fort are several large round trees.

The anchorage is in any convenient depth abreast the town. There are 5 fathoms, sand, one mile off. The date-groves are quite continuous on this part of the coast.

SHENÁS is a considerable town, with a strong fort,* 27 miles to the north-west of Sohár. There are six villages between it and that place, of which the largest is Majeís, where there is a manufactory of the cotton canvas used by native craft.

KHOR KELBEH, a village and fort with about 200 men 19 miles to northward of Shenás; there is a creek into which boats go at high water; 5 miles South of this, near a village called Murrír, the Bátneh coast ends. There are 3 small villages between this latter place and Shenás.†

The COAST from Murrír to Dibba is called As Shemíliyah: this part of the coast is at present under the government of the Joasmí chief (Sultan-bin-Suggur). The plain becomes narrower, and 15 miles north of Khor Kelbeh the hills come close down to the sea. The general direction of the coast is N. $\frac{1}{2}$ E. 35 miles to Ras Dibba; from thence it trends West about 5 miles to the town of Dibba; the mountains are high close to the sea; the coast line: cliffs, with sandy bays, in which are villages and date-groves.

SOUNDINGS.—There is no danger off this part of the coast, the depth being 30 fathoms 2 to 3 miles off, shoaling regularly but quickly towards the land. The 100-fathom line from opposite Khor Kelbeh runs across to Ras-al-Kúh (on the Persian coast), and to the northward of this

* The British force against the pirates, in 1809, took this fort by assault, after a determined resistance.

† The authors regret that the information here given about the Batneh coast should be so scanty, but, above Sawádí, Sohár is the only place visited by them, and no information about the rest from European sources exists.

line the soundings are all under that depth ; 50 fathoms being 9 miles off shore at Khor Kelbeh, and probably only 5 miles at Ras Dibba.

AL FAJÍREH, a town 6 miles north of Khor Kelbeh, with about 500 men ; hence it is $2\frac{1}{2}$ days' journey across the mountains to Shargeh. Half-way from here to Khor Kelbeh is Gháleh Kelbeh, a large village, with 200 to 300 men. Three miles north of this place is Sakunkum, a small village, with about 50 men.

KHOR FAKÁN, a village with a large date-grove, in a sandy bay, 15 miles south of Ras Dibba. The east side of this bay is formed by a projecting mass of hills, 1,000 to 2,000 feet high. There is a peaked islet, 240 feet high, off the N.E. point, with a deep water channel, 2 cables wide, inside it ; but, from the eastward, it is not easily distinguished from the land behind.

The soundings in the bay decrease regularly from 9 fathoms at the entrance. The bay is $1\frac{1}{2}$ miles across to the north rocky point, called Ras Lulíyeh. The anchorage in 6 fathoms, sand, half a mile from the village, is open to the Nashí. On the east side, just outside a point of cliff with two towers on it, is a little cove, $1\frac{1}{2}$ cables deep, with a sandy beach at the bottom, and 3 fathoms in the entrance, where small boats anchor, quite sheltered from all winds. There are about 150 men here ; excellent water can be procured with little delay, also supplies of cattle, poultry, vegetables, &c. Fish (rock cod, &c.) is plentiful. Firewood could be obtained on giving 2 or 3 days' notice, to give time to bring it in from the country.

Above Ras Lulíyeh the shore is low and sandy for several miles, with date-groves and villages, the mountains being at a short distance from the shore. Zabáreh is a small village $1\frac{3}{4}$ miles north of this point.

BIDÍYEH is a small islet, about 200 feet high, lying close to the shore, $4\frac{1}{2}$ miles north of Khor Fakán, and there is a village of the same name a little above it.

Between this and Ras Dibba are the villages Sharam, Thadneh, and Rúl Thadneh. The shore is formed of rocky points and sandy bays, the mountains rising abruptly a short distance from the coast.

DIBBA BAY.—Ras Dibba is a projecting point of cliffs of moderate height, having a small islet a quarter of a mile off, with a channel of 2 to 3 fathoms behind it. In the bay, one mile to the westward, there is a white patch* on the cliffs.

Dibba bay is 5 miles across, and open from N.N.E. to East ; the soundings decrease regularly from 15 fathoms to the sandy beach. The

* Captain Brucks' Memoir.

town and fort are 5 miles W. by N. of Ras Dibba, and contain about 2,000 men; there are very extensive date plantations in the valley on the south of the town. Good water may be obtained here, and supplies of cattle, vegetables, &c.

DIBBA to the QUOINS (Sellámeh wa Benátha).—The country north of a line drawn from Dibba to Ras al Kheimeh, forms a great promontory, called Ruweis al Jebál (capes of mountains). It is under the Maskat government as far as Khasab, thence to Ras al Kheimeh under the chief of the latter place. The inhabitants of this district are chiefly of the Shaihín tribe; they are extremely poor, quite inoffensive, and are herdsmen or fishermen; during the date harvest they are absent from their homes, being employed either in Bátneh or Khasab, &c. So secure do they feel from intrusion on their secluded homes, that, during their absence, everything is left by them in their huts (as nets, &c.) until their return.

They are, of course, very ignorant and superstitious: dates or rice are the most acceptable presents, some of them hardly appeared to know the use of money. They speak a very corrupt dialect of Arabic, and are able to make their voices heard at considerable distances among the mountains, or across the coves.*

Their huts are built of loose stones, with flat roofs, not over 6 feet high, the floor being often sunk in the ground 2 or 3 feet. They are frequently built up the sides of the hills, where the children may be seen tied by the leg, to prevent their falling over the cliffs.

From Ras Dibba, the north point of Musendom island bears N. by E. 47 miles. This is also the general line of direction of the coast, but the coast line of this (as of the other side of the promontory) is singularly indented into numerous deep-water inlets, some of great extent. In all these coves the winds are very baffling, and in consequence a sailing vessel would find it difficult to enter or leave them; the depth of water in most of them is a further difficulty, rendering it tedious to attempt warping. The larger Arab vessels never visit these coves, nor any vessel that cannot be propelled by oars; if a ship should happen to enter one, the best time to attempt to get out would be at night, when a light land wind often blows out of the inlets.

The coast is throughout precipitous, and the cliffs generally overhang near the sea level, being worn away by the action of the water, with a few sandy bays at the mouths of the valleys, and the mountains rise

* See Arthur P. Stanley's "Sinai and Palestine," London, 1856, where the same remark is made about the mountains of Sinai, and the author attributes it to the barrenness of the rocks and absence of vegetation.

abruptly from the water's edge. The whole of the shores are quite barren, except in a few little valleys where date-groves, &c. are found; the mountains are apparently entirely of bare rock, presenting a grand and wild appearance. There is however, really, much scanty vegetation on these hills, growing in fissures, &c., on which the goats feed. The inlets, enclosed by these bare precipitous mountains, have a most romantic appearance; among the mountains are many wolves, leopards, and foxes. The paths across these mountains are generally tracks fit only for goats or Arabs.

Seen from the eastward, the range of mountains has two principal peaks, of which the northern, called *Jebel Lahrín* (on the chart *Sh'am* peak), 6,750 feet high, is the highest; it is a peak with a truncated or small table top, with a little notch on the south part. The other, *Jebel Kewa*, 5,800 feet high, is a grand peak, with a small notch in the top; these are visible 80 or 90 miles, or from *Jashk* on the east, to *Lingeh* on the west side.

SOUNDINGS.—There is no danger off this part of the coast: 40 fathoms are about a mile off shore below the islet *Umm al Fiyárín*, and 60 to 65 fathoms, or the deepest water in this part of the gulf, 10 miles off. Above that islet the deepest water, viz., 70 fathoms, is quite close to the points, and just off *Musendom* island 80 and even 100 fathoms: the water shoaling to 50 and 40 fathoms half way across to the Persian coast.

RAS SUWAT is a rocky point 5 miles N.N.E. of the town of *Dibba*, and forming the north point of the bay. From this point to *Ras Musendom* the mountains rise quite close to the sea. About 1 mile north of *Dibba* is a village called *Al Karsheh*, with about 50 men.

RAS HAFAH is the south point of a promontory forming the east side of the cove of the same name: the promontory is moderately high, and decreases in height towards the south point. It is $1\frac{3}{4}$ miles from *Ras Suwat*, and between them is the entrance to the cove, the soundings in the entrance being 10 to 12 fathoms.

DÚHET HAFAH is a cove running in parallel to the coast for $2\frac{1}{2}$ miles, and varying from half to a quarter of a mile in width; the soundings in it are 7 to 8 fathoms, and quite regular. The strip of land (averaging a quarter mile in width), forming its eastern side, and terminating in *Ras Hafah*, quite masks this cove from seaward, so that a stranger would not suspect its existence: it forms a land-locked harbour. There are only a few fishermen here. It is only 20 miles from this across to *Ras al Kheimeh* in a straight line.

KHOR M'ALEH, a small cove $3\frac{1}{2}$ miles to northward of *Ras Hafah*;

the intermediate coast is a line of cliffs, with soundings of 20 fathoms at about a quarter of a mile off. The cove is three-quarters of a mile deep, with soundings decreasing from 8 fathoms at the entrance.

DÚHET SHARIYEH is an indentation 8 miles north of Ras Hafah, nearly $1\frac{1}{4}$ miles deep by three-quarters wide. There are 20 fathoms at the entrance, shoaling gradually towards the sandy beach at the head: it is open to easterly winds.

Close to the southward of this cove, and separated from it by a promontory three-quarters of a mile wide, is another cove a mile deep, opening out at its inner end to half a mile in width; the soundings are 12 fathoms in the entrance, and decrease regularly. There is a small village and date-grove at the head, on the south side. There are several other small indentations between this and Khor M'aleh.

The coast runs in a N.N.E. direction for 3 miles above this cove, and then falls back, forming the south point of Ghubbet 'Akabeh. It is quite precipitous, with a peak (about 2,000 feet) rising near the shore, which, when viewed from the northward, forms a fine cone; it is called Límeḥ peak on the chart. Behind it is a saddle mountain, somewhat higher, also conspicuous from the north. From the eastward these two hills do not show against the higher land behind.

RAS LÍMEH, 285 feet high, a narrow precipitous point 27 miles S. $\frac{3}{4}$ E. of Ras Musendom, projecting one mile from the line of coast. Off it lies a high precipitous island, 285 feet high, called Jezíret Límeḥ, a third of a mile long; with a channel, $3\frac{1}{2}$ cables wide, between it and the point. There are 20 fathoms in this channel, and a small detached rock near the island; the tide sets strong through it. The depth is 30 fathoms close to outside the island.

At $1\frac{1}{2}$ miles to the S.W. of Ras Límeḥ is a point called Ras Samút, which forms the north point of a bay, called Ghubbet 'Akabeh, 2 miles broad and $1\frac{1}{2}$ miles deep, with soundings in it decreasing regularly from 20 fathoms. In its north-west corner is a small village, called 'Akabeh,* at the mouth of the valley, with 80 or 90 men, whence there is a short way by land through the hills to Límeḥ. Close in to the village, boats find shelter from the north-easters, which are the worst winds on the coast.

To the northward of Ras Límeḥ is a sandy bay, a mile in extent, at the mouth of a valley, in which is the village of Límeḥ, containing about 200 men. The village is on the south side of the bay, and part of it is built up the hill, on the steps of the strata, one hut above the other;

* Called also Límeḥ Kedímeḥ (Old Límeḥ).

there is a date-grove and some cultivation in the valley. The anchorage, open from East to N.E., is in 11 to 12 fathoms. The best landing-place in easterly winds is on the south side of the bay, close to the cliffs, in a little bight used by the native boats. Cattle, &c. are procurable here; good water not obtainable in any quantity, except perhaps from a distance. Firewood could be got by waiting a day or two. The people here said they could cross over to Ras al Kheimeh in one day; and that there were ponds of fresh water in the mountains, distant half a day's journey.

The mountains inshore of this part rise suddenly to great heights. At the north end of LímeH sandy bay is a high precipitous hill, with four rocky islets, 10 to 30 feet high, off the centre of three little points formed by it.

The coast from LímeH runs North for 5 miles to the south entrance point of Dúhet Kubál, a high cliff called Ras Semid: the coast south of this runs $2\frac{1}{4}$ miles in a series of small points and bays to Ras Maroví, off which are two small rocky islets, 20 to 30 feet high; and at $1\frac{3}{4}$ miles south of Ras Semid, a rock, 25 feet high, lies a quarter of a mile off shore, with 22 fathoms inside it.

South of Ras Maroví is a deep bay upwards of a mile across, with a patch of sandy beach.

DÚHET KUBÁL, a fine cove, a mile broad at the entrance, running in 2 miles west, and then turning to the south for another mile, with a sandy beach at the head. Its outline is very indented, with little beaches in the bays; the points all cliffs. Close on the south-west side the mountains rise like a wall, forming a tremendous bluff, over 4,000 feet high. The soundings decrease from 28 fathoms at the entrance to 13 fathoms at the bend, and thence regularly to the head.

This cove is frequented by fishermen from LímeH, and a few poor herdsmen live in huts scattered over the valley at the head. In the western branch of this valley, or watercourse, are also the ruins of an extensive village, the walls built of large slabs of stone,* without mortar. There is a little barn hill on the summit of the lofty cliffs forming the north entrance of the cove, and hence the cliffs run N.E. by N. 3 miles in an unbroken line, of irregular height and deeply furrowed, decreasing in height to the northward, and terminating at Ras Sirkán.

RAS SIRKÁN, a perpendicular cliff several hundred feet high, forms the south entrance point of Ghubbet Ghazíreh. There are 40 fathoms within half a mile of this point.

GHUBBET GHAZÍREH† is a large inlet, nearly 3 miles wide at

* Some of the blocks measure 8 to 9 feet in length.

† Or the "deep inlet."

entrance, between Ras Sirkán and Ras Della, and $8\frac{1}{2}$ miles deep in a W.N.W. direction. Its shores are throughout precipitous and high, except in a few little sandy bays at the bottom of valleys, and are deeply indented into numerous smaller inlets and coves ; the length of its coast line being about 40 miles. The soundings are deep all over, 36 to 30 fathoms in the main inlet, and 25 to 20 in the smaller coves, 20 fathoms even being close to the cliffs ; the bottom chiefly mud and rocky at the entrance. There are two principal branches on the south side, the outer 2, and the inner nearly 3 miles deep, both running in a S.S.W. direction ; in the former is a small village.

In a small bay at the bottom of the inlet is a village called Habalein. On the north side are also two large coves, each $2\frac{1}{2}$ miles deep, separated by a high and rugged peninsula. In the inner one is a hamlet called Magágch, and the north side of this cove is separated from Khor as Shem (on the other side of Ras Musendom) by a low ridge from one-third of a mile to a mile wide. At the bottom of the outer one is the village of Fillam, built on an isthmus only 100 yards in width, separating this cove from Ghubbet Shábús.

Tide.—It is high water at full and change in the inlet at 9h. 30m.; rise and fall 10 feet.

RAS DELLA, 200 to 300 feet high, the eastern point of the high peninsula commencing at Fillam village, is a perpendicular cliff, having a conical summit. The peninsula is 5 miles long, and has a remarkable brown coloured peak, over 1,000 feet high, with a little round knob on the top, on its widest part. It separates the inlets Ghazíreh and Shábús. The soundings off it are irregular, 30 to 45 fathoms.

GHUBBET SHÁBÚS is 3 miles wide at the entrance, and runs in a westerly direction for $2\frac{1}{2}$ miles, then turns to the northward for 2 miles. The soundings in it are from 35 fathoms in the centre to 20 or 30 fathoms close to the sides. The shores are high cliffs, with little sandy beaches in places. The village of Shábús is in a little bay on the south-west side. In the northern part are two small hamlets. On the land between the head of this cove, Ghubbet Ghazíreh, and Dúhet Shísheh, is a remarkable conical mountain, 3,000 feet high, with a flat scalloped top, called Jebel Seíbí. This cove is separated from Dúhet Shísheh by a high peninsula 4 miles long north and south, at the narrowest part of which the two inlets are only one mile apart. There is a high conical hill on it, over 1,000 feet high, of light colour, which may be called Keiseh peak.

The south point of the peninsula forming the north entrance point of Shábús inlet, called Ras Bashín, is about 100 feet high, and of light red colour. The easternmost point, forming the south entrance point of

Dúhet Shísheh, is called Ras Keïseh, and is similar to the last ; a small islet lies $1\frac{1}{2}$ cables off it. There is another similar islet 2 miles below this point, and 1 mile from Ras Bashín. The Arabs say there is a small reef near the shore, with 1 fathom on it, not far from this islet, called Abú al Muwar. The soundings off these points are 30 fathoms close-to, and 70 about a mile off.

JEZÍRET UMM AL FÍYÁRÍN (anglicè, Rat island), is a rocky islet, S.E. $\frac{1}{2}$ S., $4\frac{1}{2}$ miles from Ras Keïseh, and $3\frac{3}{4}$ miles off the nearest part of the land ; it is 360 feet high, one-third of a mile long, and visible 22 miles off. It is of light colour, precipitous on the west, and barely accessible on the south-east side. The soundings near it are 60 fathoms on the east side, and 40 to 45 between it and the shore.

CAUTION.—The tides are very strong near this islet ; and from this, round Ras Musendom and the Quoins, so strong, with eddies and races, especially near the cape, as to render it desirable for a sailing vessel not to approach the coast, unless obliged ; particularly as the wind is very uncertain near the high land, often dying away, or coming suddenly from the opposite quarter. The tide runs north and south along the coast to Ras Musendom, where it sets to the north-west towards the Quoins, and east and west towards Ras Sharíteh.

RAS KABR HINDÍ (Indian's grave), about 1,200 feet high, is quite precipitous, with 3 scollops on the top ; the depth is 60 fathoms half a mile off. Between it and Keïseh point is the entrance to Dúhet Shísheh. This is the easternmost point of the Ruweïs al Jebál, and only 30 miles distant from the Persian coast about East of it.

DUHET SHÍSHEH, a fine bay, 6 miles deep east and west, and $4\frac{1}{2}$ miles wide at entrance, has 35 to 40 fathoms all over it, and 15 to 20 fathoms close to the cliffs. Its coast line is precipitous and irregular, with some little sandy beaches in the coves. There are three islets half-way in on the north side, the largest of which, about 100 feet high, is a quarter of a mile long, and of red colour. The village of Shísheh, with about 200 inhabitants, stands in a cove on the west side or bottom of the inlet.

The west side of this cove is separated from Khor as Shem by a ridge, in one part about three-quarters of a mile wide. $2\frac{1}{2}$ miles inside the north entrance point, the ridge connecting Ras Kabr-hindí with the main is only about 100 yards across, and has a rough wall built across it.

MUSENDOM ISLAND, 875 feet high, is of triangular shape, and precipitous all round, excepting 3 or 4 little coves on the east side, the only

landing-places. The highest part, near the south face, is in 3 little peaks. The island is nearly 2 miles long, north and south, and $1\frac{1}{2}$ miles broad at the south end. There are some remains of buildings on the northern part, built of large blocks of stone without mortar, similar to those at Kubál. There are a few herdsmen generally here, with their flocks of goats; the whole of the coasts about this part are frequented by fishermen from Kumzár. The north point of the island is a cliff about 100 feet high, and is generally called Ras Musendom. The soundings are 100 fathoms close to the northward and eastward of this cape, being the only spot north of Ras al Kúh where such a depth is obtained.

KUCHUL,* 100 feet high, is a little islet or pillar of rock, half a mile N.N.E. of Ras Musendom, with a clear passage between them, and as deep water as at Musendom. Near this islet the tides are at the strongest, with broken water; the noise of the races may be heard some distance in calms.

The STRAITS.—Musendom is separated from the main by a strait, called by the natives the Báb, or Fak al Aséd, *i.e.*, the Lion's Jaw, 3 cables wide, and quite clear, with 24 fathoms in it. The point of the main opposite, called Ras al Báb, is about 3 miles N.N.W. of Ras Kabr-hindí, with a deep bay between; it is about 200 feet high, and a quite perpendicular cliff. This, and the whole of the islets about the cape, are, at the projecting points, undermined by the action of the tides, sometimes for yards, in the solid limestone rock, of which they are all composed.

This channel has occasionally been used by steamers; but great attention must be paid to the steerage. Owing to the strong tides and baffling winds, it is not safe for sailing vessels. The Arabs only venture through in rowing boats.

SELLÁMEH WA BENÁTHA,† called by English sailors the Quoins, is a group of three remarkable islets, the largest of which, called the Great Quoin or Sellámeh, 540 feet high, bears N. $\frac{1}{2}$ W. 7 miles from Ras Musendom, and is visible in clear weather at 27 miles. It is wedge or quoin-shaped, the perpendicular face to the south-east, and is 800 yards across, and accessible only on its north-west side; there is a small detached fragment about 80 yards off its north side. From it the highest part of the Little Quoin bears S.E. $\frac{1}{2}$ S. 2 miles, and the peak of Gap island E. by S. $\frac{1}{4}$ S. 4 cables.

The Little Quoin, 168 feet high, is also quoin-shaped, but has a more gentle slope on top than the Great Quoin; the highest bluff is to the

* By the fishermen called also Chúkeyát.

† Sellámeh (a Musulmán saint) and her daughters.

south. It is accessible on the north side only, off which a small spit runs in the direction of Gap island.

Gap island, the name given to the centre islet, has a peak, about 250 feet high, near the centre, and cliffs all round. The soundings are 45 to 50 fathoms close to Sellámeh, and 70 to 80 close to southward of the Little Quoin, increasing towards Musendom island.

The tide sets N.W. and S.E. about the Quoins, 3 knots at springs. It is not recommended to sailing vessels to pass to the southward of them; the wind is often lost near them, and the tide races will turn a vessel half round against the helm.

CHAPTER VI.

SOUTH SIDE OF PERSIAN GULF.—COAST OF 'OMMAN; QUOINS TO
ABÚ THABÍ.VARIATION $0^{\circ} 32'$ to $1^{\circ} 16'$ West in 1864.

RAS MUSENDOM to RAS al KHEÏMEH.—This part forms the north and west sides of the Ruweis al Jebál. The mountains rise close to the sea, as far as Sh'am, 13 miles above Ras al Kheïmeh, when they begin to recede from the coast, and the low shore begins, which is characteristic of the whole of the rest of the Arab coast. The coast north of Sh'am is similar to the east coast of this promontory, viz., deeply indented into inlets, with deep water close to the cliffs, which, excepting a few little beaches at intervals, line the coast. The sea is everywhere beautifully clear.

From the northward, when not quite close in, Jabel Lahrím (Sh'am peak) is conspicuous over all the other hills, still appearing with a small table top, and to the right of it the peak called on the chart Fine peak, 4,470 feet high, which is a very regular cone on all views, and shows well, except when against the higher mountains behind, or bearing S. by E. to S.E.

TAWAKKUL,* 460 feet high, is a precipitous islet, about the size of, and of similar appearance to, Sellámeh or Great Quoin. The depths are 60 to 80 fathoms at a quarter of a mile off.

DANGER.—Three quarters of a mile West of this islet, is a small rocky patch, 50 yards across, with only 9 feet on it, and 50 to 60 fathoms close-to. When on the patch, Mishkán rocks are on with south end of Perforated rock (off Ras Sharíteh); and the west end of Kún island is on with the round hill over Kumzár. Kuchul one point open of south side of Tawakkul, and open northward of that island, leads clear to the south and north of the shoal respectively. It often has a flock of small birds hovering over it.

* The fishermen call this island Suweik, and the shoal next described Ruk Suweik.

JEZÍRET KÚN * is a precipitous island, near 600 feet high, about a mile long E. and W., with a depression in the centre forming a kind of saddle. Its west and higher peak, is 4 miles W. by S. from Ras Musendom.

JEZÍRET ABÚ SÍR, † lying off a projecting promontory called Ras Makhalif, is 6 cables long north and south, and has 40 fathoms close-to on the north side. It has cliffs all round, and near the south end a peaked hill about 400 feet high, sloping down to the north end. It is separated from the main by a strait called Bab Makhalif, a quarter of a mile broad, with 35 fathoms, sand and rock, in it, through which the tides set very strong with eddies; near mid channel is a high, precipitous rock. The north point of this island bears nearly West, $5\frac{3}{4}$ miles from Ras Musendom.

The **MISHKÁN** are several detached rocks or islets close together, 15 feet above the sea, and of white colour, lying N.N.W. of Abú Sír, with a clear passage, 6 cables wide, with 20 to 25 fathoms in it, between them and that island. There are 70 fathoms at a mile to the northward of them.

KUMZÁR.—To the eastward of Ras Makhalif, the coast runs about S.S.W., forming a cove upwards of a mile deep, and three-quarters wide, at the bottom of which is the town of Kumzár. It contains about 500 men, and is built in a gloomy valley, or gorge in the mountains; the water is obtained from a deep well, some distance up the watercourse. There is a low wall across the beach, in front of the town, which is chiefly built of the naturally squared blocks of limestone detached from the mountains. The cove is open to the Náshí, which often blows strong in winter. The soundings decrease regularly from 35 fathoms at the entrance, with sandy bottom; a vessel would have to anchor in 18 to 20 fathoms. The inhabitants are fishermen, and have 50 or 60 boats of different sizes; they take their salt fish, shark-fins, &c, for barter to Kesm, with which place they have much intercourse.

Between Kumzár cove and Ras al Bab, the point opposite Musendom island, the coast is very irregular; several bays being formed by projecting points of land, all having deep water. The largest of these lies to the south-east of Kún island; the entrance, a mile wide, is between two singular narrow projecting strips of cliff; the bay is, in one part, separated by a ridge, only about 100 yards across, from Dúhet Shísheh: it is precipitous all round. The next bay, south of Kún, has a few huts on a sandy beach at the bottom, and over it is a remarkable sharp peak on the mountains called Jebel M'aílí, 1,894 feet high, which slightly over-

* Called also Al Kháil by the fishermen.

† Called Abú Rashid by Captain Guy.

hangs to the east, when viewed from the northward: at the back of Kumzár, is a round-topped mountain, rather higher than M'aílí.

RAS SHARÍTEH is the north point of a promontory, $1\frac{1}{4}$ miles long, and in some parts only 100 yards wide, and low: the highest part may be 200 or 300 feet high, and it is precipitous all round. Off it, and bearing West, a little northerly, 8 miles from Ras Musendom, is a little islet, about 40 feet high, with perpendicular sides, and a hole through it; whence it has been called the Perforated rock. The strait, or Bab, between this islet and the point, is only a cable wide, and hardly fit even for boats, owing to the strength of the tides. There are 60 to 70 fathoms within a mile to northward of this islet, and 30 to 35 between it and the Mishkán rocks.

Between this point and Ras Makhalif, are three coves, each nearly a mile long north and south, with deep water, exposed to northerly winds, and with 20 fathoms in the entrance. In the easternmost is a small nook at the head forming a boat harbour, and a few huts, with a well of water.

JEZÍRET GHANAM.—From Ras Sharíteh the coast runs about South for 4 miles, and off it lies this island, which is $2\frac{1}{4}$ miles long, north and south, by three quarters broad, its north end bearing S.W. $1\frac{1}{2}$ miles from the Perforated rock. It has cliffs nearly all round; the north point is low, but it rises gradually towards the south end, where the hill is about 600 feet high, and of conical form, rising over cliffs about 200 feet high. There are 45 to 40 fathoms half a mile off its seaward side. The island is barren, without water or inhabitants; but goats are kept here belonging to the Kumzár people.

KHOR RAWÍ, the strait between Ghanam island and the main, is only one third of a mile wide at either end, widening to half a mile within, with soundings from 15 to 19 fathoms, sand and rock. At the north end, a low level point of rock, like a pier, projects from the island to the eastward, and in the bay on the south side of this point, a small reef extends about a cable from the shore. The tides set strong through the strait, and to the W.S.W. across the entrance. A vessel wishing to enter these straits for shelter, &c. should do so from the northern end, and, bearing in mind the set of the tide across the entrance, round the low north-east point of the island, anchoring immediately after passing it, in 15 to 17 fathoms, well over on the west side, close to the little reef mentioned above.

The Great Quoin is seen from this anchorage, over the low isthmus connecting the promontory of Ras Sharíteh with the main. It is not

recommended as a place of shelter for sailing vessels, unless obliged, as at least there would be much difficulty in getting out again. It would be far preferable to cross the Gulf to Henjám or Kesm anchorage; or, in a shemál, if possible, to fetch into Khasab bay.

On the main, opposite the south side of Ghanam island, is a little cove, called Gharum, running north a quarter of a mile, at the mouth of a valley, with date plantations and some huts on the hills behind. Between the south point of the island, and the headland forming the north point of Khor Ghúb 'Alí, is a bay a mile wide, with 33 fathoms at the entrance; it extends $1\frac{1}{4}$ miles east and west, and in it, opposite the valley of Gharum, is another bight, with a little village, called Kabbah, at its head.

KHOR GHÚB 'ALÍ runs in nearly straight $3\frac{1}{2}$ miles to the S.E., with an average width of three-quarters of a mile. On a sandy beach at the bottom is the small village of the same name, with a few date and other trees, and good water. The soundings are 28 fathoms in, and 30 off the entrance, and 16 fathoms at one mile from the head of the cove. The sides of the cove are high cliffs; that at the north entrance point is about 300 feet high, with a conical hill on the summit sloping on all sides down to the cliffs, forming a headland a mile in width, and about 800 feet high. The bottom of this cove is less than a mile from Dúhet Shísseh.

The cliff at the south entrance point of Khor Ghúb 'Alí is about as high as that on the north side; hence the coast runs S. by W. 4 miles, to the entrance of Khor as Shem, forming the west side of a remarkable triangular peninsula, which has Khor Ghúb 'Alí on the north-east, and Khor as Shem on the south-east side: the isthmus connecting it with the main at the village of Ghúb 'Alí (and consequently separating the two coves) is only about a quarter of a mile wide. The line of cliffs of which it is composed is somewhat indented, and half way, in the largest of these bays, there is a hamlet called Hasseh, on a sandy beach.

KHOR AS SHEM is an extensive and winding inlet, above 8 miles in length, its breadth in parts being under half a mile; the coast-line is deeply indented, and there are several islands in it. Its western entrance point, a cliff about 150 feet high, called Ras Shehath, is 4 miles S.E. by E. $\frac{1}{2}$ E. from Ras as Sheikh; at one-third of a mile, N. by W. of it, is a $4\frac{1}{2}$ -fathom patch. Half a mile S.S.E. of Ras Shehath is another promontory, with an islet 100 feet high, called Al Jibbeh, close off it; and between these two points is a cove a mile deep, having 16 fathoms in the entrance, with a few huts at the bottom, and good water.

At Al Jibbeh, the entrance to Khor as Shem is only half a mile wide,

with 15 fathoms water ; and, from a little distance, the entrance of this large inlet is hardly discernible. The Khor winds round the south side of the remarkable triangular peninsula before mentioned, altering its direction from South to N.E. A remarkable peak, 3,000 feet high, having a great precipice on the south-east side, stands near the south point of this peninsula ; it is called Jebel Shem.

On the north side of the inlet, 4 miles within the entrance, and immediately under this peak, is the little village of Shem, with wells of brackish water ; and abreast it, close to the south shore of the Khor, the island of the same name, reducing the width of the channel to half a mile ; the depth being 20 fathoms in this part of the inlet. At 2 miles above Shem there is a narrow point projecting three-quarters of a mile from the north side, called Ras Hatam, about 50 feet high at the south end, and rising gradually to the north ; to the eastward of which is a little village called Madeh, with wells of good water, said to be the best in the inlet.

At one mile east of Ras Hatam is an island on the north side, half a mile long, called Seíbí, the passage south of which is three-quarters of a mile wide, with 17 fathoms water in it ; there is no channel to the northward of it. The village of the same name lies $2\frac{1}{2}$ miles E. by S. from Ras Hatam, on a sandy beach, at the bottom of a deep cove in the easternmost extremity of the inlet, with 10 fathoms at a quarter of a mile from the beach. There are two irregular bays between this place and Madeh. Seíbí is the largest village in the inlet ; it contains a deep well of water, which is said to be brackish after a draught, and a water-tank or reservoir, also the ruins of other tanks, and many graves. It is built at the mouth of a great gorge in the mountains, and from it a very rugged footpath leads over to Dúhet Shábús, less than a mile distant. This village lies close on the S.W. side of Jebel Seíbí, described with the other side of the peninsula, which mountain forms a conspicuous object all over this inlet, and also appears, from seaward, to be at the head of Ghúb 'Alí cove, when that cove is open, on which bearing it makes with a sugar-loaf top.

The south side of the inlet, from Seíbí to Shem island, is quite barren, with many little points and bights. There is an islet at one-third of a mile S. by W. of Shem island, beyond which is a bay one mile in length and breadth, with high steep hills on its S.W. side, called Maklab. The south side of the inlet, thence as far as Seíbí, is 200 to 500 feet high. Separated from the bay by a high rocky point, is a sandy bight, with a village in it called Káneh. Half way between this village and Jibbeh islet is the entrance to a little land-locked cove, with a depth decreasing from 10 fathoms, which would be a convenient place for laying a vessel

aground. On the west side of its entrance is a small village called Nathífi.

There is no danger in the inlet; a sailing vessel would have great difficulty in getting in or out; but a steamer could, with the greatest ease, run up the inlet, passing Shem island on the north, and Seíbí on the south side, passing all the points as near as convenient. The tides are strong in the entrance at springs.

TIDES.—The rise and fall of tide in the inlet is $8\frac{1}{2}$ feet at springs. H.W. at full and change, 10h. 40m.

KHASAB BAY, 4 miles wide and 2 deep, is formed by a high point projecting on its west side, named Ras Sheikh Mas'aúd. This cape, generally called only Ras as Sheikh, is a point of land sloping gently up from the cliffs at its north extreme, which are about 50 feet high, towards the peak called Fine peak on the chart, 4,470 feet high; the long regular slope of this point cannot be mistaken from the westward. There are two little bights at the north extreme of the cape, with white sandy beaches, and in the eastern is the tomb of the sheikh, after whom the point is named. It is only seen when quite close in, and with the little cove open, as it stands on the beach. A sailing vessel standing into Khasab bay, with a westerly wind, should not round this cape too close, so as to be becalmed under it. The tides are weak inside this point; but outside set across from it and Perforated rock, N.E. and S.W. $1\frac{1}{2}$ to 2 knots an hour.

At this point the inlets of the Ruweis al Jebál end, the coast to the south-westward of it being comparatively straight. There are 40 fathoms at three-quarters of a mile west, and 30 fathoms 1 mile north of it.

KADEH COVE.—On the east side of Ras as Sheikh the coast runs south $3\frac{1}{2}$ miles to the bottom of a narrow cove, where is a small village called Kadeh, with a large date-grove. The cove is half a mile wide at entrance, and $1\frac{1}{4}$ miles deep; the soundings in it shoaling gradually from 10 fathoms. On its west side, near the entrance, is a large fishing village, called Múkhí, with wells of pretty good water, the houses of which are built on the lower steps of the strata of the hills.

The cliffs increase in height to the southward, on both sides of Ras as Sheikh, at $1\frac{1}{2}$ miles from which is a deep bight on the east side, with a few huts and a fine date-grove, named Haneh. There is a well of good water here, about 300 yards from the beach, and said never to become brackish or dry up. Above this place, on the mountains, is a village called Haraf, with about 100 men, the huts of which are plainly seen from a ship, when to the north-west of the cape. The inhabitants are chiefly fishermen, and keep their boats hauled up in Eideh cove, a small bay about a mile S.W. of Ras as Sheikh, where there is a well of excellent water.

KHASAB BAY.—Khasab town stands on a sandy beach nearly a mile in extent, in a bay $3\frac{1}{2}$ miles S.E. by S. $\frac{1}{2}$ S. from Ras as Sheikh, and separated from Kadeh cove by a steep ridge of hills. The soundings are 8 fathoms in the mouth, and 2 fathoms at one third of a mile from the beach; it dries off from the town a quarter of a mile in ridges at low water, which renders landing at that time unpleasant. The anchorage is sheltered from the prevailing winds, and the holding ground good, being fine sand; northerly winds are strong only in winter, and then very rarely and of short duration. In summer a vessel might anchor in 7 fathoms, but in winter not under 10 or 11 fathoms.

The town lies in a date-grove, in which the houses are much scattered, extending a considerable way up the large valley terminating in this bay. Little is seen from the sea, except a fort near the centre of the grove, and two towers on the beach. The fort contains the sheikh's house, and is much out of repair. The sheikh is a wálí or deputy of the Sultan of Maskat, who gets an annual revenue of about 400 dollars from the place. There is a small square tower on the western rocky point, overlooking the bay. Population of the valley about 600 men. Fresh water in good wells plentiful, and used to irrigate the plantations; the best well is close to the hills on the east side, and about 400 yards from the beach. At the back of the date-grove the valley is well cultivated with corn, vegetables, &c.; and the bare steep hills rising on either side have a very picturesque effect. Supplies of good water, wood, cattle, and vegetables, &c., could be easily obtained; a cloth for wearing apparel, much used by the Arabs, is made here. Quantities of dates are exported from this place, boats coming from the west coast of 'Omman, and Kesm, &c., in the date season to procure them.

There is a projecting high rocky point on the east side of the town, between which and Ras Shehath, which is about 1 mile distant, are several little bights, the largest one with a little village called Fanakhel, with good water in wells.

The soundings in Khasab Bay are 20 to 22 fathoms in a line about East of Ras as Sheikh, and decrease regularly; bottom sand and rock. It is a good place for shelter in a Shemál, which here blows W.S.W. to W. by S.; when a vessel might run in and anchor, with Ras as Sheikh N.W. by W. about $1\frac{1}{2}$ miles, in 17 or 18 fathoms, without going quite in to the anchorage off the town.

The COAST on the west side of Ras as Sheikh, runs S.W. $\frac{1}{2}$ S. $3\frac{1}{2}$ miles, in patches of cliff, to Ras al Jádí, which is a bold cliff about 1,000 feet high, and conspicuous when seen from up or down the coast; and 11 miles S.S.W. of this latter is Sh'am point, formed by a mountain about 2,500 feet

high, sloping regularly down to the sea, and, like the last, conspicuous from the north or south, when there also is seen a notch in the highest part of the mountain above it. To the southward of Sh'am point the mountains begin to recede from the sea; the coast trending gradually to S.S.W. and S. W., and being, from this point, a low sandy shore, which continues the whole extent of the south coast of the Gulf. When a little distance off the coast, Fine peak, before mentioned, is very conspicuous, forming a beautiful cone.

The soundings south of Rás Jádí are less abrupt, and the 40-fathom line, which is three-quarters of a mile off that cape, is about 8 miles from the shore at Sh'am point, where also 25 to 30 fathoms are 2 miles off. This coast is quite exposed to the Shemál, and vessels at anchor on it would have to put to sea at the approach of one, standing off on the port tack. There is no danger from Ras as Sheikh to Sh'am.

There are several villages between these points; the following description of them, as far as Sh'am, is chiefly from Capt. Guy's memoir.

Al Jírí is a small village, $1\frac{1}{2}$ miles below Ras al Jádí. It stands under the hills on a beach, which extends as far as Bokhá. Al Jádí village is 3 miles below the point of the same name and inhabited by fishermen. There are some wells of good water near the beach.

Bokhá is a small town in a bay formed by a slightly projecting point, 5 miles below Ras al Jádí. This little bay is open to the northward, and quite shallow; there are 7 fathoms at 1 mile distance, it then deepens suddenly to 25, and thence to 40 fathoms at 2 miles off. There are three forts, one ruinous, in the town; a square fort on a hillock half a mile east of the town; and one on the western point of the small bay, with a high tower at one of the angles; this last is visible 9 or 10 miles. There is a plain behind the town, with cultivation and date-groves, there are also date trees between this place and Jádí. The inhabitants are chiefly fishermen.

Between Bokhá and Sh'am point are three little sandy beaches, with deep water close-to, in which are the little hamlets Fúdar, Ghumtheh, and Tíbat, all inhabited by fishermen, with a few date trees at each.

SH'AM FORT, about 2 miles south of the point of that name, is the first town on the low sandy shore, there being a plain 1 to $1\frac{1}{2}$ miles wide between it and the mountains, partly cultivated, with date-groves, vegetables, &c., and good water in wells; the inhabitants are cultivators and fishermen. One mile south of the town is a ruin on a hillock about 50 feet high, and visible 12 to 13 miles. About 4 miles south of the town is a creek, used by boats at high water.

The SOUNDINGS at the commencement of this low coast begin to decrease, there being 10 fathoms at half a mile, and 20 fathoms 3 miles

off, and they still farther decrease as you advance to the S.W. ; bottom generally sand.

RAMS, a fort and small town in a date-grove, 6 miles N.E. $\frac{1}{2}$ N. from Ras al Kheïmeh ; a tower, showing above the trees, is the principal object from seaward ; it lies on a Khor, the entrance to which is nearly dry at low water. About two miles inland of it is the hill fort of Zayah. One and a half miles southward from Rams is a small creek, communicating with the Khor at Ras al Kheïmeh. The date-groves are a little distance from the shore, which is swampy here.

RAS AL KHEÏMEH (anglicè, Tent-point), a large town, built on a long sandy peninsula or spit, is the capital of the Joasmí chief, whose authority is acknowledged in all places south of Ras as Sheïkh, as far as Jezíret al Hamrah, also in Shargeh and the little towns near it, and on that part of the east coast of 'Omman called As Shemíliych. It may contain 4,000 or 5,000 inhabitants.

To recognize this place from seaward, it may be mentioned that the plain is here only about 6 miles broad, and increases in width very rapidly to the southward, as the coast turns here to south-west, so that from the northward the town appears to be at the point where the mountains end. On a nearer approach is seen a range of high reddish-coloured sand-hills, which begin a mile south-west of this place, and extend past Al Hamrah. The town is chiefly of stone houses, with some square buildings higher than the rest, which are the sheikh's residences ; on one corner of the highest is a little dome, which is about 60 feet above the sea, and visible 12 miles ; the flag of the Joasmís (red with narrow white border) is shown on another high building to the left : there is a white round tower at the north end, and two square towers on the wall built across the peninsula at the south end of the town. There is also a detached tower three-quarters of a mile south-west of the town, near the commencement of the red sand-hills. In running up from the westward, the end of these red sand-hills will be a guide for finding the place.

In crossing the Gulf to this place, after taking a departure from the Tumb, the tides, which run strong up and down the coast, may throw a vessel out of her course. There is no danger on the coast, and 20 fathoms will be found about 9 miles off. A good berth is in $5\frac{1}{2}$ fathoms $2\frac{1}{2}$ to 3 miles N.W. of the town ; the holding-ground is good, and the natives say there is not so much sea in a north-wester as at other places on this coast. With the town S. to S.E., and 1 mile off shore, there is a sandbank with 11 feet on it, and 12 or 13 feet inside it at low water ; W. by N. $2\frac{1}{2}$ miles from the town, it has only 2 to $2\frac{1}{2}$ fathoms on it, with 3 or 4 fathoms inside it, and it is said to extend some distance to the south-west.

The entrance to the Khor or Backwater, is round the end of the low sandy point on which the town is built, and is $1\frac{1}{4}$ miles to the north-east of the town; large boats can enter at high water unladen; it runs down S.W. close to the back of the town, where the native boats lie; there are only 2 feet at the entrance at low water, but 9 feet, when inside, as far as the town. There are 2 low islets in the backwater opposite the town, on one of which is a small fishing village. A great many boats and baghalahs belong to this port, which has quite recovered from its destruction by the expedition in 1819. Cases of piracy are now unknown, and the inhabitants of this, once the head of the piratical ports, are quite civil to Europeans. In 1859, Sultan Bin Suggur, the *ci-devant* pirate chief, who was nearly 100 years of age, was still the reigning prince; he succeeded his father in 1803, and signed the treaty against piracy with General Grant Keir in 1820. It sends about 20 boats to the pearl fishery: the inhabitants are of the Joasmí tribe.

On the east bank of the backwater a dense date-grove commences, apparently extending up to the foot of the mountains, and continuing along the coast to Rams.

Supplies of cattle, vegetables, and fruit may be obtained here; water uncertain.

The coast is nearly straight between this and Sh'am, and all low, the mountains approaching the sea to the northward.

From Ras al Kheïmeh, Sh'am point bears N.N.E. $\frac{1}{2}$ E. 17 miles; the soundings are 3 fathoms from half to 1 mile off shore, and 20 fathoms at 4 to 5 miles off.

RAS AL KHEÏMEH TO ABÚ THABÍ.—This coast, formerly the chief seat of the pirates, is throughout low and sandy, and runs nearly straight, in a general direction S.W. $\frac{1}{4}$ W. for a distance of 120 miles. The mountains of the Ruweis al Jebál are seen till past Debay, in clear weather.

The towns are *all* built near the entrance of a Khor or saltwater creek, of which there are many along this coast, often communicating with each other, or forming large backwaters, in which their vessels are kept. They are very similar in appearance, and it is difficult for the stranger to make out which town he is off; on this account a somewhat detailed description of the appearance of each is given.

Supplies.—Cattle, and vegetables, &c., may be everywhere obtained; the beef is often very good, and much better than the mutton. Water is scarce and indifferent, especially to the southward of Debay, and probably could not be spared to a ship. It is generally obtained in shallow wells dug in the sand.

ANCHORAGE.—The shore, except just above Umm al Kúweïn, where the reef extends $1\frac{1}{2}$ miles off, is safe as far as Ras Hanyúra; and thence to Abú-Thabí, fronted by reefs; the soundings above the former place are regular. The anchorage off this coast is quite exposed to the prevailing wind, holding-ground often bad, being hard; and no ship should attempt to ride out a winter north-wester, but put to sea on the approach of one, standing off on the port tack, as the wind blows about W.N.W. Vessels should anchor further out in winter than in summer, and furl sails with reefs in.

TIDES.—The tides set straight along shore, N.E. and S.W., and may cause a vessel to find herself off the wrong place, after standing across the Gulf. Their rate is from 1 to 2 knots, and the rise and fall varies from 6 to 8 feet. At Ras al Kheïmeh it is high water, full and change, at 11h. 15m., and at 12h. or 12h. 15m. at Abú-Thabí. The stream runs 2 hours or more after the turn of the tide.

The great pearl bank, under which term may be included all the space on the Arab coast south of the 20-fathom line, begins on this coast; opposite Shargeh may be considered about the commencement. Capital mullet are caught in all the Backwaters.

JEZÍRET AL HAMRAH is a fort and town S.W. by W. 10 miles from Ras al Kheïmeh, built on an island formed by the Khor. The fort has 5 or 6 towers, and 3 or 4 round trees in it, one of which is large and conspicuous, and close to this is a high square tower with two rows of windows: there is also a tall slender tower at the west end of the town. There are no date trees here. The red sand-hills mentioned in page 76 end 2 or 3 miles to the south-west of this place.

The entrance to the Khor is round a low sandy point called Ras Abú Ahmed, three-quarters of a mile N.E. of the town; it has 2 or 3 feet in it at low water in the entrance, and 7 or 8 feet inside; it runs to the south-west between the town and the strip of sand forming the beach, and is shallow opposite the town.

The inhabitants are of the Záb tribe, and it is under the chief of Ras al Kheïmeh.

The soundings off the town are, 10 fathoms at 4 miles, and 20 fathoms at 12 miles distance; 4 fathoms being a quarter of a mile off; bottom generally sand. The coast between Al Hamrah and Ras al Kheïmeh forms a slight and shallow bay.

CAUTION.—From Al Hamrah, Umm al Kúweïn point bears S.W. by W. $\frac{1}{4}$ W. 14 miles. The coast between forms a slight bay; and a reef, nearly dry in parts, extends from 2 miles south of the former place to Umm al Kúweïn point, 5 miles N.E. of which its outer edge is $1\frac{1}{2}$ miles

off shore. It shows well by day ; 10 fathoms, a safe depth, are 3 miles off its outer edge, from which depth the soundings decrease gradually to 4 fathoms close to the reef.

KHOR AL BEÏTHEH is a creek, whose entrance is half-way between these two places, only navigable for small boats, and communicating with Umm al Kúweïn Khor. On the seaward side of the island formed by this creek is a small fort, $3\frac{1}{4}$ miles E.N.E. of Umm al Kúweïn point, with a date-grove to west of it.

UMM AL KUWEÏN, an independent town, inhabited by the Al 'Ali tribe, with probably 1,500 inhabitants. When about 10 miles off this place, or in 12 fathoms, it may be known by seeing 6 or 8 detached towers standing apparently in the sea, one very much higher and larger than the rest, with a flagstaff ; this one is seen after all the others are below the horizon, showing like a boat. This and two other towers stand on the point, being part of the wall built across the isthmus. In the town are two high stone buildings, one with two towers, the other with one, and another tower stands about a quarter of a mile east of the town, on the west bank of the Khor. About $1\frac{1}{4}$ miles east of the point, stands a round kiln-shaped tower with a ruined mosque, a building with two rows of windows, close to the right of it.

The soundings are regular, there being 4 fathoms a quarter of a mile from the point, and 8 fathoms at 2 miles, while the 20-fathom line is nearly 15 miles off, widening out towards the commencement of the pearl bank. A vessel might anchor in 5 or 6 fathoms, with the high tower on the point (centre of the three) about South, but in winter, further out in 8 fathoms.

Umm al Kúweïn point is of low sand, with rocky beach, and about a mile to the south of it is a date-grove. From this point the coast runs about East nearly a mile to the Khor, when it turns to south and west, forming the peninsula on which the town stands ; it has a reef of sand and rocks, forming the west side of the entrance to the creek, extending off it to the northward.

The entrance to the Khor, which has only 2 feet at low water, is 2 miles N.N.E. of the point, and has the shore reef before described (page 78) on its east side. It runs south till abreast of the town, where it passes between the present town and the point on which stood the old town,* of which the only remains are the tower and mosque mentioned above.

At the town the Khor is over a quarter of a mile wide, and carries a depth of 6 to 8 fathoms ; it here splits into several branches, the main

* Destroyed in 1819 by the expedition against the pirates.

one running south, one to the eastward communicating with Khor Beïtheh, and another branch bends to the west and north-west round the town, and close to the back of Umm al Kúweïn point, forming the isthmus across which the wall with three towers (above mentioned) is built: this branch has 1 to 3 fathoms behind the town, where the boats lie. It forms an extensive backwater, with several low islets in it.

The present town was called Libíni before the destruction of the old town, and was then insignificant, but, the old town not having been rebuilt, the inhabitants and name have been transferred to it. It is a thriving place, they possess some large baghalahs, and send 70 to 80 boats to the pearl fishery.

The coast from hence runs S.S.W. $\frac{1}{2}$ W. nearly straight for $6\frac{1}{2}$ miles to Al Hamríyeh: the soundings continue regular, bottom rocky; 6 fathoms are about a mile off shore.

AL HAMRÍYEH, a small but rising place; it lately asserted its independence of the Joasmí chief: the tribe is the Beni Nayim. It has a square fort on the shore, with 5 towers in a cluster, visible 11 miles, also two detached towers to the southward near the creek, which is small. There are no trees at this place; it sends 50 boats to the pearl fishery.

'**AJMÁN** fort, bearing S.S.W. $\frac{3}{4}$ W. 12 miles from Umm al Kúweïn point, is under an independent chief, and the tribe is the Beni Nayim. The fort is small and high, and one of the towers of it, on which the flag is shown, is much higher than the rest; it is visible 12 to 13 miles. There are only a few date trees north of this place, but south of it they are thick as far as Shargeh. The water is bad, and obtained from wells about a mile to the south-west of the town. 'Ajmán sends 60 boats to the pearl fishery; it was partly destroyed in 1819 by the expedition against the pirates.

The soundings off this place are slightly irregular, the bottom being rocky; and three-quarters of a mile from the shore, opposite the town, is a 2-fathoms rocky bank, with 4 fathoms inside it: 10 fathoms, about 5 miles off shore, is a safe depth at night. The ground is bad for anchorage.

The Khor is the most accessible one on the coast; its entrance is close to the northern end of the town, between two spits of sand extending a quarter of a mile from the shore: the bar is of sand, while in most of the other creeks it is rocky; and has 5 feet at low water; at high water very large boats get in.

Opposite the town there are 2 fathoms in the Khor at low water, which there turns to the eastward, and widens into a shallow Backwater; the channel is near the town side, there being a bank extending half way over from the north-east low sandy entrance point.

AL HAÏREH and **AL FUSHT** are two small villages on the shore, within a quarter of a mile of each other, 3 miles from 'Ajmán, and 2 miles from Shargeh point; the former, which is the northern, has two detached towers, and at Fusht there is a small square fort: the rest of both these villages is of mat huts. Half a mile from the beach, and seen above the date trees behind these places, is a large round tree, conspicuous from seaward; it is the last thing seen, except 'Ajmán high tower, when sailing away from the coast, or at a distance of 12 or 13 miles. There are date-groves all the way to 'Ajmán and Shargeh. The Khor is very small. They are dependencies of Shargeh, and send between them about 30 boats to the pearl fishery.

SHARGEH, the most important town on the coast, is under a son and deputy of the chief of Ras al Kheïmeh, and contains 8,000 to 10,000 inhabitants, chiefly of the Joasmí tribe. It is about $1\frac{1}{4}$ miles in extent along the east bank of the Khor, and there are several detached towers in it; the highest square one, a little to the right of the centre of the town, is that on which the flag is shown. It has a large proportion of stone houses, and there is a high round tower at the south end of the village of Líyeh, which appears part of Shargeh from the sea.

At the south end of the town is some white rocky rising ground, 30 or 40 feet high, forming a bluff at the south end, which is conspicuous approaching the place from the north or north-west. The date-groves extending from 'Ajmán end at Shargeh, but there are a few scattered trees about 1 mile to the south of it.

The soundings are nearly regular, 5 fathoms are less than half a mile off, opposite Líyeh (or Shargeh) point, and 1 mile off at the entrance to the Khor; 9 fathoms are 3 miles off. The anchorage is with Líyeh point from South to S.S.E., (so that boats can fetch off and on from that point with the sea breeze), in summer in 5 fathoms, but in winter in 6 or 7 fathoms; the holding-ground is bad, being rock with little sand. Off this place the 20-fathoms line is 25 miles from shore, the great flat called the pearl bank having fairly commenced.

The Khor is very small and shallow, its entrance is a mile N.E. of the flagstaff tower, it runs to the south-west between the town and the sea, leaving only a narrow strip of sand outside it, winds round the little bluff before mentioned, and spreads out into a small Backwater, joining the Khor from Khán village. Notwithstanding there is only about one foot on the bar at low water, they manage to get large baghalahs, &c., in, unladen.

The best place for boats to land is not at the creek, where there is generally a surf, but at Líyeh point before mentioned. This is a little projecting rocky point opposite the town, (generally there are some native

boats lying there,) which you pull round, and can bring to bear about N.N.W. ; it is the only place to attempt to land at in even a moderate Shemál. There are plenty of ferry-boats across the creek, which on landing here is between you and the town.

LÍYEH.—On this point, and separated from Shargeh by the Khor, is the large village of Líyeh, a suburb of Shargeh, all mat huts: the large round tower at its south end is a quarter of a mile from the point.

Shargeh sends about 350 boats to the pearl fishery: they build very fine boats (bagáreh and batíls) here. There is a British agent, an Arab, and many Banyans are settled here. Several baghalahs belong to this port.

From Líyeh point the south point of Debay creek bears S.W. $\frac{1}{2}$ S. $7\frac{1}{4}$ miles, the coast forming a slight bay between these two points. At $2\frac{1}{4}$ miles south-west from Líyeh point is a little creek with two small towns, Khán and Abú Heíl, on opposite sides of it. These two places are dependencies of Shargeh, and contain, the former about 1000, the latter, also called Mumza, about 2,000 inhabitants.

KHÁN, the northern and smaller town, is nearly all built of mat huts, with five detached towers in different parts of it. The Khor, which is insignificant, splits into two branches; one to the north-east, which joins Shargeh Backwater; the other to the southward, behind Abú Heíl village. It sends 25 boats to the pearl fishery. The land inshore of the town for some miles is low and swampy.

ABÚ HEÍL is also built almost entirely of mat huts, and has four towers, nearly in line, N.W. and S.E., at its south end, in the wall built across from the sea to the Backwater. These towers, and those of Khán, look high in proportion to the size of the houses. This place sends 40 boats to the pearl fishery. The ground is bad for anchorage, as at Shargeh; the depth is 5 fathoms at a mile off shore. There are no date trees between this and Debay; the coast-line is quite white sand.

DEBAY is a large town under an independent chief, and it contains, with the suburb of Díreh, 5,000 or 6,000 inhabitants; the tribe is the Abú Felása, a branch of the Bení Yás.

The town stands a little back from the shore; there is a date-grove behind it, which also extends a mile to the southward, ending in a detached clump, but none north of it. It is recognizable as being the last town on the coast, there being not a single date tree or house from this all the way to Abú Thabí. Jebel 'Alí also can be just seen from the anchorage. The highest building is the sheikh's house, a high square castle, with a tall round tower at the south-west corner, on which the flag is shown; there are 8 or 9 other smaller towers in the town and suburb.

The anchorage off this place is with the low sandy point on the south side of the Khor on with the flagstaff tower, or S.E. by S. The depth is 5 fathoms at rather more than half a mile from the shore, and a vessel should not anchor any nearer; 6 fathoms, or about one mile off, is a good berth.

A flat stony reef extends upwards of a quarter of a mile from the point, and half a mile off the coast opposite Díreh, with only 6 feet water on its outer edge, and extending some distance towards Abú Heil.

The south low sandy entrance point is half a mile N.W. of the town, and projects slightly from the line of coast. The entrance of the Khor has only 2 feet at low water in parts, with rocky bottom, and is much blocked up by the reef; the channel winds to the southward, close past the south entrance point; a spit extending off the opposite or Díreh point, which bears S.E. a third of a mile from the former; the Khor then turns gradually to the east, between the town and Díreh point; where it is only 150 yards broad, and has 4 to 5 fathoms water. It extends for miles to the south-east, but is not used farther than the town, except by fishermen.

On the north entrance point of the Khor, opposite the town, stands a large suburb of mat huts, called Díreh, with a few towers on its north side. The reef is half a mile off shore opposite this place, and decreases to the northward. Debay sends 150 boats to the pearl fishery; the boats are also employed in other fisheries during the winter.

THE COAST from Debay to Abú Thabi has an average direction of S.W. $\frac{1}{4}$ W.; it is quite barren and uninhabited, throughout very low with tufts of coarse grass growing on the sand hillocks, intersected by creeks, and in parts by extensive swamps; no tree to be seen larger than a mangrove bush. The coast is so uniform in appearance that the smallest peculiarities are noted by the Arabs, and names given to them; though they are of little use to shipping, as they can only be made out when quite close in, as in small boats running along the coast. There are no inhabitants, but landing on the main land between these towns, except with an armed party, would be hazardous, as the coast is often visited by the Bedúin of the interior.

JEBEL 'ALI, the only landmark on the coast, 220 feet high, is a flat-topped hill, sloping gradually at each end, visible 17 miles; it is 3 miles inland.

RAS HASAH is a name given to a little rocky point, projecting very slightly from the line of coast, and only shows as a small dark patch on the white sand when close in. It is 30 miles from Debay, and the soundings between are regular, fine sand, 3 fathoms at three-quarters of a mile off, deepening regularly seaward. Another such little point is Ras Guntút, about 5 miles to southward of Ras Hasah.

KHOR GONÁTHA and **GORÁBÍ** are two creeks, where native boats cut mangroves for firewood; the former may be known by mangrove bushes at the entrance, which are left as a landmark by the Arabs; Gonátha is the larger of the two, and said to be easily entered by large boats.

From this to Abú Thabí there is a succession of creeks, mostly communicating with each other, some with deep water inside, and forming extensive swamps and backwaters, extending many miles into the interior, with merely a small strip of sand between them and the sea. They are visited by Arabs to cut firewood or to fish. The entrances are very shallow.

RAS HANYÚRA is a very low sandy point, forming the north point of a shallow bay, 3 miles wide. Many creeks have their mouths in this bay; the south low sandy point is called Maraffain. Neither of these points would be visible much more than 5 miles. The landmark by which the Arabs find it is a small cliff at the south end of a little table-land, 20 or 30 feet high, the top of which slightly overhangs the base. It is on the shore at the bottom of Hanyúra bay, and is visible 7 or 8 miles.

HÁDIT THALAIR REEF.—From the above point to Abú Thabí, a distance of 21 miles, the coast is fronted by an extensive reef, commencing a little way above Ras Hanyúra, off which it extends $1\frac{1}{2}$ miles from the beach. Its outer edge then runs to the W.S.W. 7 miles, when it is probably 5 miles from the land (which would then be barely in sight from the poop), and then turns to the S.S.W., joining the reef opposite Abú Thabí town. It has 6 fathoms close-to; the soundings are not a good guide approaching it, as there are all sorts of overfalls to the North and N.W. The natives call it Hádit Thalair, and say there is a boat-channel inside it, used by them during Shemáls.

RAS AL GHORÁB is a rocky point with low sand-hills, about 11 miles N.E. of Abú Thabí; here the reef extends nearly 2 miles off shore, the most projecting part of it being between this point and Hanyúra. There is a Khor at this point, which the natives say is very extensive, with more water in the entrance than any on the coast, and very deep water inside.

RAS LAFFÁN, is a low point 3 miles N.E. of Abú Thabí on the north side of the entrance of a Khor, which runs to southward, joining the great backwater behind Abú Thabí, baghalahs belonging to which place are hauled up in this Khor.

ABÚ THABÍ is the most populous town on the coast. It stands at the west extremity of the country of 'Omman, and is the chief town of the great Beni Yás tribe, and under an independent chief. The first establishment here of the tribe took place 100 years ago.

The town extends for near 2 miles along the shore ; at 2 miles S.W. of the fort is the entrance to a large bay or backwater, $3\frac{1}{2}$ miles wide at the entrance, and extending possibly 20 miles into the interior, and there are several islands in it ; the greater part is shallow, but there are many deep channels ; it has not been sounded. By its connexion with Khor Laffán it makes an island of the land on which the town stands ; but there is one part fordable at low water. A few stunted date trees, about a mile inland of the town, are the only vegetation seen from this place.

The town contains about 20,000 inhabitants, and there are some Ban-yans here. It sends 600 boats to the pearl fishery. This tribe is a fine race of men ; they wear the hair long over the shoulders, twisted up in plaits. The chief is very friendly to the English. Cattle might be obtained here ; but the only water found is exceedingly brackish, all the good water being brought from Debay ; and as it is sold at the rate of one kerán for two or three goat-skins or mussuks-full, it can only be afforded by the richer class. The Abú Thabí fishing-boats, out of the pearl season, are found at every island, creek, &c., between this place and Khor al 'Adeïd ; the chief of this place claiming the sovereignty over the intermediate coast. His authority is nominally recognized also by the Bedúin on this part of the coast.

PILOTS.—A ship intending to visit the coast, &c. between Debay and Al Bid'a would get the best pilots at this place.

DIRECTIONS.—A vessel bound to Abú Thabí, had better take a departure from the island Sir Abú Neir, and keep the peak of that island N. $\frac{1}{2}$ W. while in sight : great overfalls will be met with in the soundings ; and she must be prepared for finding herself set to either side of the place by the tide. A good look-out must be kept from the mast-head, as the fort, the first thing seen, will not be visible more than 8 miles from the deck, or when in 8 fathoms ; which depth is also found close to the reefs. The reefs to the eastward of the place are the chief danger. If coming down the coast, care is requisite, particularly at night, in passing the Hadit Thalair reef.

The fort is small, with six towers close together, on one of which is the flagstaff. With the exception of a smaller tower on the beach, the town is exclusively built of date mats ; it should bear S.E. when made. Large vessels anchor with the fort S.E. by E. distant 2 to $2\frac{1}{2}$ miles, in $4\frac{1}{2}$ or 5 fathoms, where they are quite exposed to the prevailing winds ; but vessels not drawing more than 12 feet may enter the inner anchorage.

To stand into the inner anchorage, get the fort to bear S.E. by E. $\frac{1}{2}$ E., and steer for it, looking out for the west point of the reef, which has only a few feet water on it, and shows well. It is only 4 cables from the sandy beach, and must be rounded quite close. The channel between the reef and the north-west sandy point of the town is only $1\frac{1}{2}$ cables wide, and

has 12 feet at low water. Hauling to northward, close round the reef, a vessel may anchor in $2\frac{1}{2}$ or 3 fathoms, with the fort from South to S. by E., a quarter of a mile off shore. The afternoon is the best time to enter this anchorage. It is quite sheltered by the reef from all winds. There is a passage on the east side of the reef used by native craft, which a vessel might use to leave this anchorage with a westerly wind; the eye must be the guide in attempting it.

The shore is very low, all white sand; the only landmark besides the fort is a low hill, about 50 to 80 feet high, on an island in the backwater, called Jebel Fatehsi, 6 miles S. by W. of the fort.

SÍR ABÚ NEÏR ISLAND, also called by the fishermen simply *Sír*, is about $2\frac{3}{4}$ miles long by 2 miles broad, and lies near the north edge of the pearl banks, 45 miles N. $\frac{3}{4}$ W. from Abú Thabí. The island is covered with hills, chiefly volcanic, except the south-east corner, which is a very low sandy point, half a mile in length, and formed probably by the action of the sea in north-westers, which sets round both sides of the island, and meets there. The outline of the island is very irregular, the only remarkable feature being a table-topped peak, 245 feet high, near the south end of the hills, rather conspicuous, except from northward; it is visible 17 miles.

This island is safe to approach; the shore reef, which nowhere extends more than a quarter of a mile off, is farthest off shore on the south side. By night care must be taken, in passing the island on the south side, not to run on the low sandy point, which cannot then be seen, the island appearing to end with the hills. The soundings are not a good guide in approaching it, there being 10 to 15 fathoms close to the shore reef, and the same water several miles off; and to the north-west of the island are great overfalls, near the edge of the pearl bank.

The anchorage is off the south-east low point, on the east side, in 12 fathoms, a third of a mile off shore; sheltered from the *Shemál*, but open to the *Nashí*. The island is claimed by the *Joasmí* chief, but it is not permanently inhabited. It is quite barren, nothing, excepting brushwood, growing on it. There is brackish water in wells near the east side; there is said to be a good deal of sulphur on it. During the pearl fishery the island is visited by fleets of boats, to open the oysters, &c.; and during the winter there are generally a few *Shargeh* or *Debay* fishing-boats here, the crews of which, with their families, erect temporary huts, and remain for some months fishing, chiefly catching sawfish and sharks.*

* H. M. Frigate *Fox*, ran ashore on the north end of this island at night, in January 1846.

CHAPTER VII.

SOUTH SIDE OF PERSIAN GULF.—ABÚ THABÍ TO RAS REKKEN.

VARIATION, $1^{\circ} 16'$ to $1^{\circ} 54'$ West in 1864.

GENERAL OBSERVATIONS.—The whole of the coast is low and sandy, or stony, with here and there rocky hills of moderate height, or else sand hills. It is quite barren and desolate; water only obtainable at one or two points, and then very indifferent. From Abú Thabí to Wukrah (about 60 miles south of Ras Rekken), a coast line of 250 miles, there are no fixed inhabitants, not a village or house. The coast is occasionally visited by the Bedúin of the Beni Yás and Monásir tribes, who would attack any person landing, if not in a strong armed party.*

Great reefs extend for miles out of sight of land along its whole extent, sometimes with channels inside them. They are generally flat and stony, with patches of broken coral, and irregular depths over them from half to 3 fathoms; they show well, except on cloudy days, or when under the sun. The water is shoal everywhere, with great overfalls, forming the largest and richest portion of the Pearl bank. The 20 fathoms line, within which nearly all the overfalls are found, and which, therefore, may be considered the edge of the Pearl bank, passes about 10 miles north of Sír Abú Neír, thence nearly straight, about W. by N., to Hálúl, and thence to N.W., passing about 30 miles north-eastward of Rás Rekken. Within this line the soundings average from 10 to 15 fathoms, with occasionally deep places of 20 to 25 fathoms, and many shoal knolls, with 3 to 9 fathoms, which latter are the Pearl banks proper, and probably each one has a name by which it is known to the Arabs. The water is everywhere quite clear. When near, or within the great reefs, it is not safe to be under way after dark, the eye being the only guide; a good look-out from aloft is indispensable.

Many islands lie off the coast, some of them high, and all of them have a projecting, low, sandy south-east point, similar to that described at Sír Abú Neír, in page 86. They are all barren, and without any water, except one or two, where a little, very brackish water is found; and, with

* Captain Brucks states in his Memoir that the boats of the surveying vessels, in 1824, were several times attacked.

the exception of Dalmeh, have no permanent inhabitants. They are frequented by the pearl boats during the summer, and in the winter by Abú Thabí fishermen, a few of whom are generally to be found at all of them. They make a stay of two or three months, and take their families with them. They catch and dry fish, and take turtle, which abound on the reefs, for oil.

This coast is never visited by Europeans, except the part from Ras Rekken to Wukrah, which has been occasionally visited by the ships of the squadron stationed in the gulf. It is but seldom that even the Arabs land on the main in this part.

A vessel intending to visit this coast, or navigate within the reefs, should have an Abú Thabí pilot on board.

ABÚ THABÍ TO JEZÍRET SÍR BENI YÁS.—The actual coast line of this part is little known, it is difficult even to sight it. Reefs lie off it to a distance of 10 to 30 miles, with many low islands on them, some of considerable size, and overgrown with mangroves. There are many creeks and backwaters on the eastern part, and channels through and among the reefs, which are only partially explored. The coast appears to be rather a stony than sandy desert.

The tide appears to be regular, but the progress of the wave is much retarded in the shoal water, and is possibly 8 to 9 hours later near Khor al 'Adeid than at Abú Thabí, but no observations have been made on the tide hours. The rise and fall at Sír Benī Yás is about 8 feet. The stream runs very strong in places, as round the points of islands, through narrow channels, between reefs, &c. Leaving Abú Thabí, the coast line for 30 miles has an average direction of S.W. by W., with a reef extending off it, from 3 miles wide, at Jezíret al Bahrání, to 8 miles, farther west. The shore is made up of a number of low islets, formed by creeks running in behind them and detaching them from the main-land proper, which, as is the case close to the north of Abú Thabí, lies at some considerable distance, and has not been explored. Many of these islets, and the main-land behind them, are resorted to by the Arabs to cut mangroves for firewood, and the creeks are visited by fishermen. All the creeks are said to be shoal at the entrance, though with deep water within. There is no description of this part left by the former surveyors beyond a few lines in Capt. Brucks' memoir, and it has not been visited since.

JEZÍRET AL BAHRÁNI is a low sandy island, about 5 miles in length, on the south-west side of the Abú Thabí backwater; it has some mangroves on it.

Jebel Bukshásheh is a small hill on the island next to south-westward of Al Bahrání, and used as a landmark by the Arabs.

KHOR GUNTÚR is a large channel in the reef, 22 miles from Abú Thabí, a mile wide at the entrance, and extending south for 8 miles, where it splits into two branches. It has 2 fathoms at low water at entrance, and 4 or 5 farther in. On the east bank, near the south end, is the island of the same name; and to the eastward of the latter, separated from it by a small creek, is Umm Majárib, another island. These two islands are several miles in extent, low, and grown with mangroves.

RÁS AL KAHAF is a flat-topped rocky point, comparatively elevated, and probably on the main land, projecting between Umm Majárib and Jebel Búkháshéh.

Jeziret Saláli is an island 7 miles long, on the west side of Khor Guntúr; it has a small hill near the east side, the rest of the island being low. Through the channel to the west of this island, boats can get into Khor al Bezm at high water.*

BEZM.—The great reef on the west side of Khor Guntúr extends uninterruptedly for 53 miles in an east and west direction, and has a whole chain of islands on its southern edge, called generally by the Arabs Bezm,† although each has its particular name. On the south side of this reef, between it and the main, lies the great inlet called Khor al Bezm.

HÁLAT AMBARAS, a low narrow sandy islet, without any vegetation, is about half a mile in length, and being only 3 or 4 feet above high water, is not visible more than 5 miles. It lies West, a little southerly, 53 miles from Abú Thabí, on the south-east edge of a great detached reef called Rug al Hiya, which has not been surveyed. It is probably not more than 8 or 9 miles in length or breadth, and there are one or two other sand-banks on it, dry at low water. The channel, called Khor Bishúbur, south of this islet, between it and the Bezm reef, has 7 to 8 fathoms water, and is about 2 miles wide, but the tide runs strong through at springs.

HÁLAT HAÏLE, an islet similar to the last, but much larger, lies S.E., about 5 miles from Ambaras, and is barely in sight from it. It marks the opposite side of Khor Bishúbur, being situated on the great Bezm reef, and near its northernmost point.

The whole northern edge of this reef is only approximately delineated, and the lead is no guide in approaching it, there being 6 to 10 fathoms close to, and no deeper water at 15 miles distance.

* The last five paragraphs are from Captain Brucks' Memoir, the authors not having visited that part.

† It is to these islands that Captain Guy gave the name of East India Company's Islands, which is objectionable, as tending to mislead strangers, especially foreigners.

RUG ZUKÚM is a large pearl bank, the shoalest part of which, $3\frac{1}{2}$ fathoms,* is 38 miles N.W. by W. $\frac{1}{4}$ W. from Abú Thabí. The soundings are but little guide approaching it. There is a clear channel about 18 miles in width between it and Rug al Hiya; its extent is not very accurately ascertained.

FUSHT BÚTÍNÍ is an extensive reef, with five or six dry sand-banks on different parts, the centre of which is W.N.W. about 18 miles from Hálat Ambaras; and South from Zírkúh island. It is near 10 miles in extent, and, in parts, is nearly dry for miles. The fishermen on this reef, as well as many others, may be seen walking about knee deep in water, looking for pearl oysters, miles from their boats; which has a singular effect. There is a clear channel between this and al Hiya reef, called Khor Halj, with five or six fathoms; and also to the southward between it and Reideim, the N.W. portion of the great Bezm reef.

DIRECTIONS.—A vessel may pass to the southward of this reef by day. The dry banks on the Bútíní may be seen from aloft some distance from the edge of that reef, while Bezm al Gherbí (the western islet on the Bezm reef) may be seen from aloft in mid channel. If passing through Khor Halj, keep on the Bútíní (the weather) side, and keep the sand-banks of that reef in sight till past it, taking care that a look out is kept for the pale green water of Al Hiya reef to the eastward. If passing through Khor Bishúbur, after leaving the Bútíní reef, endeavour to make the edge of Al Hiya shoal by steering carefully towards it, keeping a good look out; and run along it till Ambaras islet is sighted, which should be passed a quarter to half a mile off. These passages should only be used with a fair wind, and the sun astern of the vessel. Between Ambaras and Abú Thabí the sea is very imperfectly sounded all south of the Zukúm bank: there are great overfalls.

KHOR AL BEZM is an extensive inlet or blind channel, lying between the Bezm reef and the main. It is between 40 and 50 miles long, and from 5 miles broad at the entrance to 1 or $1\frac{1}{2}$ miles at the head. The Khor has been fairly surveyed by Lieut. Guy, 1823, excepting the entrance, which is quite unsounded. To enable a vessel to navigate with certainty this channel, or to the westward towards Sír Beni Yás, a more detailed survey, on a larger scale, is required; but, with a good look out, a vessel of light draught may safely enter it. The number of 3 fathoms patches, of which there are doubtless many more than shown on Guy's chart, would render it hazardous for a large vessel.

The entrance is 19 miles East of Sír Beni Yás. It is about 6 miles wide, between the west part of the Bezm reef, and the reef extending off

* Captain Brucks.

the islet called 'Aeich. The soundings in the Khor decrease from 10 fathoms at the entrance to the head, and are very irregular : its general direction is E. by S.

BEZM AL GHERBÍ (*i. e.* the western) is a low islet, partly covered with mangroves, about 2 miles in extent. It is the western of the group on the Bezm reef, and about 2 miles from the western edge ; the N.W. portion of the reef, called Reideim, and shown on Guy's chart as detached, extending 7 miles to N.W. of it. The island is visible from the deck about 6 miles. There is no water on it ; a vessel might obtain a considerable quantity of green mangrove wood for fuel here, by the crew cutting it, as, probably, also at the other islands to be described on this reef, which are also all without water.

'Aeich, a very low, sandy islet, 10 miles west of the last, on the opposite side of the entrance of Khor al Bezm, lying on a reef, which extends to the northward 8 miles from 'Aeich, with several dry sand-banks on it, the north-east point of which is called Ras Burrowd.

DIRECTIONS.—To enter Khor al Bezm from the northward, a vessel should keep Zirkúh peak N.N.E., while in sight, sighting the sand-banks on Fusht Bútíní ; and when these are all left behind, stand down south, looking out sharp for shoal patches ; she would then either sight 'Aeich, or Bezm al Gherbí ; and when the latter bears E.N.E., haul up for it, looking out for the south-west point of the Bezm reef. If intending to anchor at this island, she may do so opposite the east end, 1 mile off shore, in 5 fathoms clay, good holding ground, sheltered from all winds by the reef.

If only passing the island, it should be kept well in sight, so as not to be too close to the shore reef, which, opposite this, extends 6 miles off shore. From this anchorage two points of the mainland are seen : Rás as Sawámí, the eastern, is a light coloured cliff, apparently about 50 feet high ; the other, of similar appearance, is called Ras Jilk'ah, from an imagined resemblance to a fort. A small anchorage, called Bandar Merfa, is on the main to the eastward of as Sawámí, where some intercourse was once carried on between piratical boats and the Bedúm. The main land from this continues in an average direction east and west.

*After passing Bezm al Gherbí the soundings appear more regular, and a succession of islands will be sighted, which should all be passed one to two miles off ; being guided by the eye in approaching the reef. The third island, called, al Fihah, is six miles in length ; the fourth island, which is rocky, may be passed close to ; the next, called Jeneineh, also rocky, lies $1\frac{1}{2}$ miles from the Khor, and has several detached rocks near it ;

* The following paragraph is compiled from Captain Brucks' Memoir.

the eastern, and largest of these islands has low sand hills on its western part, and is about 16 miles long. Its name, as obtained by Capt. Guy, is Jezíret Biliyard, but our Arab pilot did not recognize that name.

SÍR BENI YÁS island is about 6 miles north and south, and 4 broad, and like Sír Abú Neír, is called merely Sír by the boatmen. It has a mass of volcanic hills near the centre, the two highest peaks, 430 feet high, are close together. The shores of the island are low, except a small hill, 60 or 80 feet high, on its east side; the island is visible 21 miles. Bad water may be obtained by digging on the north-east side, near a ruined village on the shore; on the south-east side is a singular, land-locked, natural harbour, half a mile in length and breadth, with 6 fathoms inside, bottom mud; and 4 fathoms in the entrance, which is only 400 yards wide: the tides are strong in the narrow entrance. This bay was called Meriton bay by the discoverer, Lieut. Grubb, I.N. (1820).

Rashid is a low rocky islet quite flat in form, N.N.E. of the centre of Sír Beni Yás, with a channel 4 miles wide between them; it is three quarters of a mile long, and only visible 5 or 6 miles. The shoals from 'Aeich islet to this, have no practicable passage through them.

DIRECTIONS.—To proceed to Meriton bay, on the south-east side of Sír Beni Yás, after sighting the island, if coming from the northward, steer for it on a South bearing till Rashid islet is seen, which should be passed within a mile, to avoid the reef extending off the north part of Sír Beni Yás. Great overfalls will be experienced north and N.W. of Rashid. With the peak of the island bearing West, there is a detached patch, lying a mile off shore. There is a low white sandy islet only a foot or two above high water, lying $3\frac{3}{4}$ miles off Sír Beni Yás, East of the highest peak, with that peak nearly on with the little hill near the east point. It is quite practicable to work through the channel between Rashid and the island, as the reef on both sides shows well, and the channel is 2 to 3 miles wide.

After passing to eastward of the above patch, or when the peak bears W.N.W., haul in for the sandy south-east point of the island, when Meriton bay will be seen over the low spit forming its south side, and anchor in 7 fathoms clay, a quarter of a mile off shore. A reef extends three-quarters of a mile to the east and south from the south tip of the island, so that a vessel should not stand too far over towards the west side of the entrance of the bay. The little hill on the east point of the island should be on with the low south-east point, or with the east side of the bay. This anchorage is sheltered from all winds. The hills on the island are 2 miles distant from this south-east point. If wishing to enter the bay, which, as the tides are strong, is not recommended unless particularly required, the deep water will be found close round the end of the sandy

tongue of land, or east entrance point; the water inside is everywhere deep.

This is the best passage in, that south of the island being less than a mile wide, between the reef off the south tip of the island, and that extending 2 miles off the opposite point of the main. This passage also, has only 3 or 4 fathoms in it, and the tides set strong through, with eddies.

The north point of the main, $3\frac{1}{2}$ miles from the south point of *Sír Beni Yás*, is low, with a reef extending in parts 2 miles off; and 2 miles S.W. of it is a mass of hills, 350 feet high, resembling an island when first seen, and called *Jebel Thunní*.

There is a second little sandy islet, about 3 feet above high water, $3\frac{1}{2}$ miles to the south-eastward of *Meriton* bay, with deep water all round; and 6 miles farther to the south-east are two low islets with stunted grass called *Jezíret al Hamar*, lying on the shore reef, at the bottom of a great bight in it; they are about two miles off the main land, which has low stony hills on it. The shore reef projects from them 5 miles to the north-west, and is steep to, with 16 or 18 fathoms water near it, but they may be approached on their western side to half a mile.

There is a passage from *Sír Beni Yás*, past '*Aeich* into *Khor al Bezm*; but it requires a fair wind and some care. The sandy islet, mentioned already, east of *Beni Yás* peak, has a small reef extending north-east from it, and a $1\frac{1}{2}$ fathoms patch lying 1 mile S.W. of it: pass close to the southward of these, looking out on the starboard hand for the point of the shore reef, and keep *Beni Yás* peak West, till '*Aeich* is sighted, which pass quite close to on the south side, as there are two patches within a mile S.E. of it. When past these a vessel may stand over to *Bezm al Gherbí*. Before reaching '*Aeich*, many little dry sand-banks will be seen to the northward, lying on the reef which extends between that island and *Rashid*.

ZÍRKÚH, the highest island on the Arab side of the Gulf, has a mass of hills on the centre part, with one rather remarkable peak, 540 feet high, which is visible 24 miles; the plain at its S.E. end is $1\frac{1}{4}$ miles long, the island is $2\frac{2}{3}$ miles long, north and south, by $1\frac{1}{2}$ miles broad, and has no water, nor any vegetation except stunted grass and brushwood. A flat reef extends a short distance off all round, except at the south point; it is most extensive in the bay on the east side, where it is three-quarters of a mile off shore. On the north and west sides there is but little reef. The anchorage is with the south point from W. to W.S.W., half to three-quarters of a mile off shore, in 4 or 5 fathoms. A vessel here will be sheltered from the *shemál*, but some swell rolls round the island.

This island affords better shelter than either of the four next mentioned, being larger. The soundings are little or no guide approaching it, owing to the overfalls in every direction ; this remark applies also to the other islands about to be described. At 15 miles to the north-east of it is a pearl bank carrying 9 and 10 fathoms water.

CAUTION.—At $1\frac{1}{2}$ miles south of this island, is a shoal ridge with $2\frac{1}{2}$ fathoms least water on it, according to Guy's chart. We did not find less than 3 fathoms, and the Arab pilot said this was the least water. The tides are strong at springs, between this shoal and the island, causing rippings like breakers, which extend in a north and south direction off the south end of the island.

DÁS island is $1\frac{1}{4}$ miles long and three-quarters of a mile wide, the hills, highest 145 feet, are confined to the northern half, the low south part being three-quarters of a mile long. The hills are of even outline without any remarkable peak, and are visible 15 miles. There is no water on the island. It is safe to approach to half a mile, or even less, there being very little reef off it. The anchorage is off the south-east low sandy point, about half a mile, in 5 to 8 fathoms, but much swell would be felt in a shemál, as the island is so small and nearly end on to the wind. The best landing is on the west side of the south-east point.

JEZÍRET GIRNEÏN or **KARNEÏN** (anglicé, the two-horned), is $1\frac{1}{2}$ miles long N.W. and S.E., by half a mile broad. It has three remarkable detached dark peaks, highest 190 ft., all nearly precipitous, close together on its north end, the southern part being quite low. No water. The island is safe to approach to about a quarter of a mile ; anchorage in 7 fathoms, half a mile off the south side ; shelter about as good as at Dás. When first seen, the three little peaks, on some views, resemble a ship under sail. The island is visible 17 miles.

ARZENEH island is $1\frac{2}{3}$ miles long, by one mile broad ; it is covered with hills, except a plain of half a mile, at the south end. The hills have nothing very remarkable in their shape ; the highest is 200 feet above the sea, and is visible 18 miles. There is no water on it. The reef off the island is small, nowhere extending more than one-third of a mile from the shore, with deep water between it and the pearl banks described below. Anchor with the south point about West, half a mile off shore, in 4 or 5 fathoms.

CAUTION.—This island has several pearl banks on its north and east sides, viz. :—an extensive one with $3\frac{1}{2}$ and 4 fathoms 8 miles N.N.W. of it ; another, a 3 fathoms bank, N.E., 2 miles from the island ; and the two following, from Captain Brucks' description,—east of the island $1\frac{1}{2}$ miles distant, is a small bank with two fathoms, and S.E. of the island, $2\frac{1}{4}$ miles,

is another small bank, having $1\frac{1}{4}$ fathoms only in one part. The *Marie* sailed over the site of this latter without getting anything less than three fathoms; and the pilot declared he knew of no less water; but caution is required, as, indeed, everywhere south of Dás, as it would be almost impossible to find every shoal patch by sounding; the look-out is the best guide. A vessel drawing more than 10 to 12 feet should not be under weigh after dark anywhere within these islands.

DEÏNÍ is a low flat sandy island, with scanty grass on it; the highest part is a black detached rock, one of several situated at the north end, about 10 feet above high water. It is $1\frac{1}{2}$ miles long N.N.W. and S.S.E., and only one-third of a mile broad, and visible 6 to 7 miles. The reef extends one-third of a mile off, except at the south end. Anchor in 8 fathoms, a quarter to half a mile off the south point. The shelter is better in a shemál than would appear from the small width of the island. The west side of the reef has 20 fathoms within a very short distance. This island would be very difficult to make at night. There are several pearl banks with 4 and 5 fathoms to the north and east of this island from 4 to 12 miles distant.

SHIRA'AO makes in 5 or 6 little hills or hummocks, which are nearly in one when the island bears West; they may be 30 or 40 feet high. The island, which is visible 8 miles, is very small, and there is little or no reef off it. One mile to northward is a detached small rocky pinnacle, 6 or 8 feet above the water, with 8 fathoms between it and the island. Six miles N.W. of this island is a one fathom patch on a large pearl bank. If standing towards the island from the northward, it should not be brought to bear to the eastward of South after sighting it.

DALMEH island is about $4\frac{1}{2}$ miles long north and south, by $2\frac{1}{2}$ broad; it is hilly; the south low point or plain is $1\frac{1}{2}$ miles long and very low. The hills at a distance appear like a long table hill, with a small barn-shaped peak on it near the north end; this is 250 feet high, and visible 18 miles. There is a little village and tower, with about 15 families, on the west coast of the plain. There is plenty of brackish water in wells; and many goats are kept, which feed on the scanty herbage. The island is much visited by the pearl boats, on account of the water; and during the season there is a large stationary population, who supply necessities to the boats and establish a kind of bazar here. The reef round it extends a quarter to half a mile off shore, except at the south point.

HÁLAT MASÚMA is a small sandy islet (2 or 3 feet above high water), $2\frac{1}{3}$ miles S. by E. from the south point of Dalmeh; it lies on a reef, which extends 1 mile round it, and has 9 fathoms close-to. There is a boat passage between the reef and Dalmeh; it is narrow, and has not

more than 3 fathoms, which is quite close to Dalmeh ; the tide sets strong through it.

The water is pretty deep (16 to 20 fathoms) close to Dalmeh, except on the south side, between it and the main.

Anchorage.—On the east side in 10 fathoms, three-quarters to 1 mile off the low sandy plain, where there is good shelter in a *shemál*. The native boats lie on the west side, off the village, quite close to the reef, where they are sheltered from the *shemál* by the south-west point of the island, and a little point of the reef off it, and are also safe if a *náshí* came on.

SÍR BENI YÁS TO WUKRAH.—The coast continues to be most difficult to approach ; the sea is full of shoals, and shoal patches ; there are so many of these that the most minute survey, which the present one is not, might fail to detect all, so that a good look out is everywhere necessary. The great detached reefs lying off the coast have been but roughly delineated, especially the outer edges. There are many small islands, all low, off the coast.

Observations on the seaward face of the reefs.—Their extent and configuration are almost unknown : being out of sight of land, and having, as far as is known, no practicable channels through them, no vessel requires to approach them, and should avoid doing so. The Arabs do not visit their neighbourhood in any vessels larger than pearl boats, and sail through or over the great reefs guided by the eye.

Outside these reefs the sea westward of a line from Dalmeh to Shira'ao has been imperfectly explored ; it is full of overfalls, and if a vessel stand west of that line it should be done with great caution.

ZÁBŪT ISLAND bears S.W. $\frac{1}{2}$ W. from the south point of Sír Beni Yás, distant 12 miles ; it has white cliffs, and looks like a sail when first seen ; it is visible 13 or 14 miles, and is close to the main land ; there is no passage behind it.

The reefs extend 7 or 8 miles to north and north-eastward of the island, and to the west and north-westward of it, are two shoal patches ; there is also a large space of unsounded ground in this direction, where it is probable there are many pearl banks, so that it would not be desirable to approach this island nearer than 8 miles, except with great caution.

Jebel Barákah is 200 to 300 feet high, and is near the sea coast, with a low cliff on the shore under it ; and Jebel Wúteid, a smaller hill about 7 miles to south-westward of it, and 2 miles from the coast. The low ranges of hills extending along shore from Khor al Bezm terminate at this place, and a very low coast begins, which extends for 25 miles to westward, and is called Subákkeh, or the salt ground, from the efflorescence caused by the evaporation of sea water. It is partly swampy, and a most

desolate bit of coast ; it is the southernmost part of the Persian gulf, being partly south of the parallel of 24° . The Arabs say this is in summer the hottest place in the gulf. It is difficult to approach, or even to sight ; the foul ground extending from 4 to 6 miles off it. A small point near the southernmost bight is called Ras Asság.

YASÁT (also called in the singular Yás), a group of low level islands, with cliffs all round, covered on the top with coarse grass ; about 15 feet above the sea, and visible 7 miles. The group extends about 6 miles north and south, without any passage through it ; it consists of two islands, and three little islets to the south of them. The northern island is the larger, being 3 miles long by $1\frac{1}{2}$ broad. A great reef extends off it to north-eastward for 5 miles, or, perhaps, more ; and the chain of reefs is continuous, with no channel fit for a ship, from these islands, for 60 miles to northward.

The Anchorage is with South islet bearing E. to E.N.E. a quarter to half a mile. In rounding the South islet, look out for a small spit on the south-east side, and a little shoal patch, about a mile W.N.W. of it. There is a clear channel 4 miles wide, south of this islet, with irregular soundings of 5 to 20 fathoms ; the main land is 8 miles distant, and the reef extends 4 miles off it, so that the land is not in sight when close to the edge. East of these islands, as far as Zábút, the soundings are incomplete ; there are great overfalls. Six miles S.W. of Hálat Masúma is a bank, passing over which the *Marie* had three fathoms.

West of these islands, as far as Al 'Adeid, the survey is more complete ; but even here the *Marie* found three new patches while sailing through.

MAHAMALÍYEH, a small islet, of light colour, 15 to 20 feet high, visible 7 miles ; it is flat topped, with a notch in it, and cliffs all round. There is a little detached patch, 1 mile to the south-eastward, but no reef at the islet. The channel north of this islet is best. It bears W.S.W. $5\frac{3}{4}$ miles from Yas south islet.

UM AL HATAB, a low sandy island, about half a mile in extent, with tufts of coarse grass, is visible only 4 or 5 miles. It lies on a rocky reef, and there are several rocks above water off the north end ; the reef extends half a mile off on the east and west sides, but the south side is clear of danger. It is N.W. by W. $\frac{1}{2}$ W., 8 miles from Yas south islet.

RAS AS SELLAH, a slightly projecting point, just where the coast changes its direction to north and south, at the western end of that low part called Subákkeh. Here is the beginning of higher land, rising from the sea to 100 feet or more, at some distance from the coast ; the summit is quite level, and the high ground terminates to seaward in a series of

little terraces or steps. It is of light colour, and sometimes has a sparkling appearance in the sun, from fragments of gypsum crystals which lie about its surface.

A little north of this point are some wells near the shore, but the water is brackish. The shore is safe to approach to half a mile, the great reef off Subákheh beginning 3 or 4 miles to the eastward of this point.

Kassar al Bayyeh is a rock above water on the shore reef, about 3 miles north of the wells. The coast runs north 13 miles from Ras as Sellah, and then turns to north-westward for $2\frac{1}{2}$ miles to Ras Mashéríb the reef extending from half to three-quarters of a mile off shore. There are 10 to 12 fathoms close to this shore reef, the water slightly deepening approaching it.

NEÏTI, a low sandy islet, with several detached rocks off the north end, and stunted tufts of grass on it; as on many of these islands there are a few graves, probably of fishermen. The islet is under half a mile long and very narrow.

It lies on the western edge of a great reef, which appears to join that extending off Yasát islands, although there are, doubtless, boat channels through it. A spit extends a mile S.S.E. of the island, between which and the reef off the opposite point of the main is the entrance of the straits, only two-thirds of a mile wide. The soundings in the bay, south of Neíti and Yasát, are pretty regular, with overfalls of 3 or 4 fathoms; the bottom in the deeper parts is mud, and on the shoaler spots rock or sand.

There is a remarkable little table hill (75 feet) on the main, S.W. of Neíti, at the point where the coast turns to north-westward, and to the southward of it is a succession of small points (low cliffs) and bays, towards Ras as Sellah. From Table hill point there is a range of low white cliffs for one mile to north-westward, after which the coast becomes low towards Ras Masheríb, which is a very low and rocky shelving point.

Neíti straits are $3\frac{1}{2}$ miles long, and narrowest at the south entrance. It appears to be the only safe way to get to the northward along shore. The channel is on the Neíti side, and has only 4 fathoms in one part. While passing Neíti, look out for a spit extending off the main, nearly half way across; after passing that islet the straits are wider. Foul ground extends nearly a mile to northward of Ras Masheríb; a vessel should, therefore, not stand too close past it. The tides are strong in the straits, the flood setting to north-westward.

AL FAZÁYAH is an island, $2\frac{1}{2}$ miles long N. and S.; it is of light colour (like all this part of the coast), has low cliffs all round, and is

about 50 feet high, and level on top. It lies off a long point of land, separating two deep inlets, to be next described. Its north point bears W.N.W., 5 miles from Ras Masheríb. There is no passage between it and the main.

DÚHET AN NAKHLEH is an inlet, about 5 miles in depth, north and south, between Fazáyah and Ras Masheríb; it has 3 to 5 fathoms in it, and its width is contracted by the reef off each side of it, to an average of half a mile; there are one or two shoal patches in the entrance, rendering it not suitable for shipping.

DÚHET AL GWAISÁT is a finer inlet than the last, the entrance is on the west side of Fazáyah island. It is 7 miles long nearly north and south, and 2 miles wide inside; the entrance, which has 3 fathoms in it, being very contracted; small reefs projecting off both sides of it.* There are 6 fathoms inside.

RAS AL HATHRAH resembles in appearance Ras Masheríb, from which it bears N.W. by W. $\frac{1}{2}$ W. 10 miles; on its east side are several rocky islets on the shore reef, which extends half a mile off shore, as far as the entrance of Gwaisát cove. The coast at this point turns to W.S.W. for 15 miles, forming a great bay between this point and Ras Búgmehz. This bay has never been visited, except by the surveying ship in 1823; it contains many shoal patches; soundings are all under 10 fathoms, generally mud. The shores are low, white hills, except at the head, which is low.

FAREIJÁD is a name given to two little islets (20 to 25 feet), 2 miles apart, bearing E. $\frac{1}{4}$ N. and E. by N. $\frac{3}{4}$ N. from Ras al Hathrah $6\frac{1}{2}$ and 7 miles. They are very small, table-topped, of light colour, and visible 7 or 8 miles. They are in one when N.N.W. and S.S.E. A reef extends $1\frac{1}{2}$ miles west of the southern islet; and S.E. by S. 4 miles from it, is a detached patch, nearly dry.

GHÁREEH is a group of rocky islands, lying 2 miles N.W. of Ras al Hathrah. It is 3 miles in extent, and consists of one island, about a mile across, and numerous smaller ones. They are low, and flat on top. Three miles north of this group is an extensive patch of foul ground.

RAS BÚGMEHZ, the east, low, rocky point of the promontory, forming the south side of Khor al 'Adeid, has a reef named Fusht umm Jenna, extending 3 miles east of it. The reef is 2 miles broad, has 10 to 15 fathoms close to, and there is a small channel inside it, close to the point. From hence the coast runs S.W. and South, 19 miles, to the bottom of the great bay west of Ras al Hathrah.

* Captain Brucks says only 40 yards wide at one part.

Four miles N.W. $\frac{1}{2}$ W. from Ras Búgmehz is a point of low cliff, just outside the entrance of Khor al 'Adeid, which has two hills behind it, called Jebel al 'Adeid. The north-eastern (190 feet) rises over the point, is of light colour, and has a table-top, with several scollops in it; the other (300 feet) is $1\frac{1}{2}$ miles to south-westward, and is visible about 17 miles. A reef extends half a mile north and one mile east from this point. The south, low, rocky entrance point of the Khor is $2\frac{1}{2}$ miles W. $\frac{3}{4}$ N. from this point; and there is a sandy beach between, on which once stood a village; there are still three wells of tolerable water and some ruins.* There are three rocks on the south side of the channel, half a mile east of this point.

Three other little rocks lie on the edge of the reef, half a mile N.W. of this point, close to the northward of which is the channel leading to the Khor, which has only one fathom in it at low water, and is narrow. On the north side of this channel is a shoal about a mile in extent, with deep water between it and the opposite shore; but no passage into the Khor to the north of it.

KHOR AL 'ADEID is a winding inlet, 5 miles in length, opening out inside to a lagoon, about 5 miles long and 3 broad. Its average direction is S.W.; the south shore being a continuation of the rocky hills of Jebel al 'Adeid, while the north coast, and shores of the lagoon, are of perfectly white, drift sand hills, 50 to 80 feet high, without any vegetation, and of round shape.

The average width of the Khor is half a mile, but the channel is contracted by banks and rocky islets to about half that width; depths in it from two to four fathoms. The lagoon is shallow at the entrance and south end, but has 6 and 7 fathoms at the north end. The water in the inlet and lagoon is of a beautiful blue colour, and very clear.

The anchorage off the entrance is close to the north shore, just inside a slightly projecting sandy point (which has no reef off it), 2 cables' lengths off shore, in six to ten fathoms, sand and shells: outer hill bearing S. by E., and having the detached middle ground shoal, mentioned above, south of the vessel. It is difficult to estimate your distance off the white sand-hills, they look farther off than they really are. This anchorage is sheltered in a shemál, and in a náshí there is not very much sea, owing to the great reefs to seaward. Khor al 'Adeid is frequented in the winter by Abú Thabí fishermen, who remain some months. Very fine mullet are caught here.

* This place being the boundary of the territory claimed by the Abu Thabí and Bahrein chiefs, much jealousy exists about it, which led to the settlement being abandoned.

DIRECTIONS.—Approaching this place from the southward, steer north from Ras al Hathrah, or work up, making short tacks, between the shoal lying N.N.E. of that cape and Ghareh islands, with the shoal north of them, looking out for any patches that may exist not marked on the chart. Jebel al 'Adeïd will be sighted after passing Ras al Hathrah; when the outer hill bears W. by S., you are clear of Umm Jenna shoal, which shows well and is deep to; in hauling in for the anchorage, keep rather to the northward to avoid the outer end of the middle ground shoal.

To the northward of this place great care is required, while south of Fusht al 'Areïf: the sea is full of shoal patches, but the coast appears clear of reef. In particular, there is a small one-fathom patch in the fairway, 4 miles N.N.E. of Jebel al 'Adeïd. There are doubtless more of these patches than have been discovered, but a good look-out will always enable a vessel to avoid them. No vessel ought to navigate with the sun ahead, and too much attention cannot be paid to the look-out.

GAFFAI, a low island with tufts of grass, visible 4 or 5 miles, and about 2 miles across, lies 12 miles east of Ras Búgmehz. A shoal extends 2 or 3 miles to the south of it, and N.N.W., $4\frac{1}{4}$ miles from it, is a reef which has not been explored, and may be connected with the island. Three miles south of Gaffai are two very low islands, extending together about three miles north and south, called Mayamát en taïn, lying on a great reef which extends 5 miles to the southward, as far as the islands Fareïjad.

Outside Mayamát, for a distance of 15 miles, the sea is said to be full of shoals, with no passage between them, but it has never been examined.

NAJEHÁN.—From the north entrance point of Khor al 'Adeïd, the coast runs nearly straight, N.N.E., for 18 miles. It is all of high white sand-hills, like those on the north side of that Khor, and is called Najehán: there is no shore reef off it.

JEZÍRET LAS-HÁT, a group of small rocky islets, flat-topped, with light coloured cliffs, about 15 feet high, and visible 6 miles. It consists of two islets, a mile apart, and several detached rocks; the western islet is N.E. $\frac{1}{4}$ E., $11\frac{1}{2}$ miles from Jebel al 'Adeïd.

Two and a half miles S.S.W. of Las-hát islands is a shoal ridge 2 miles in extent north and south, with only 1 fathom on it in parts. About 4 miles N.E. of this group is a bank of white sand, barely covered at high water, and, 2 miles N.W. of this bank, a shoal nearly dry.

MACHÁSIB, a little flat rocky islet, 6 to 8 feet high, with a reef round it extending a mile off, and visible about 5 miles. It is 14 miles E.S.E. from Las-hát. There is a clear channel, about 3 miles wide, with great overfalls, between it and Fusht al 'Adeïd.

HÁLAT DALMEH is a small sand-bank, nearly, if not quite, covered at high water, visible only 3 or 4 miles. It bears N.E. by E., $11\frac{1}{2}$ miles from Machásib. It lies on an extensive reef, whose limits are not determined, except on the west side, where it only extends 1 mile off the sand-bank. There is no safe channel through the reefs south of the islet, and it is doubtful whether there is one north of it, fit for a ship. The sea face of this reef is not at all determined, and the sea, east of it, is nearly unexplored as far as the meridian of Deíní island.

FUSHT AL 'ADEID is a very extensive reef lying E.N.E. from Las-hát, its western edge being 9 miles distant from those islets. It is nearly dry in parts, and extends about 10 miles north and south by 6 in width.

FUSHT AL 'AREIF, a very dangerous reef extending 7 miles off shore to south-eastward, in a long narrow spit, so that the shore is barely visible when off its point. It shows well by day, and is very steep-to. The tides set strong across this reef, rendering great care requisite in passing it. The channel between it and Fusht al 'Adeid is only $3\frac{1}{2}$ miles wide, and is the best one by which to approach Al' Adeid. Its outer tip bears N.E. $\frac{1}{2}$ N., 22 miles from Jebel al 'Adeid, and from Las-hát, N.N.E. $\frac{1}{2}$ E., 11 miles. Its outer edge bears S. by E. $\frac{1}{2}$ E., 15 miles from Jebel Wukrah, which will be carried from aloft nearly down as far as the point of the reef.*

JEZIRET BISHIRYÁT, a little, low islet on the Fusht al 'Areif, 5 miles W.N.W. from the south-east tip of the reef, and opposite the northern point of the Najehán range of sand-hills: there is a channel $1\frac{1}{2}$ miles in width between them and the islet, leading to an extensive backwater, which has not been examined. The north entrance point of this backwater, 2 miles north of the islet, is called on Captain Guy's chart Ras al Allarch: it is at this point that Fusht al 'Areif is connected with the shore.

From this point the shore runs nearly north and south 17 miles to the entrance of Al Bida' harbour; it is all low, sandy, or stony desert, as far as Jebel Wukrah, the shore reef extending off from $1\frac{1}{2}$ to 2 miles.

UMM AL HÚL is a small, low point, $3\frac{1}{2}$ miles south of Jebel Wukrah, projecting but slightly from the line of coast. The width of the clear channel between this part of the coast and the outlying reefs has not been accurately determined, but is from 6 to 7 miles. The soundings are pretty regular in the channel: 6 to 10 fathoms. In working up or down,

* E. I. C. Schooner *Constance*, in April 1851, was becalmed in the evening, a short distance to the north of Fusht al 'Areif; she was set to the south-westward, and grounded on it, when the tide was found setting strong across the reef.

a vessel should not stand too far on the off-shore tack, about this part.* From Fusht al 'Adeid, shoals extend, without any known channel through them, for 20 miles to the northward, ending nearly in the latitude of Al Bida'. They consist of shoal patches, with deep water between, and the breadth of the foul ground is from 10 to 15 miles; these reefs are called Greinain, and are said to be dry in parts at low water. On Captain Guy's chart they are called, probably incorrectly, Rug Machásib. Captain Brucks says, there is an outlying patch of these shoals, with $1\frac{1}{2}$ fathoms on it, about 12 miles east of Al Bida', which has not been fixed: the *Marie* sailed twice over the assigned position, without finding it. This, if it exist, is the northernmost of the outlying dangers on this coast.

WUKRAH TO RAS REKKEN.—The coast is all low, except at Al Bida', where there is some slightly elevated rocky ground, and a few hillocks in different other parts; it is chiefly stony desert, the northern part being very low. The chain of outlying reefs extending all the way from Yasát islands, ends at Al Bida', and the sea above that place is clear of danger; but the shore reefs extend, in places, as much as 9 or 10 miles off shore, so that the bottom is seen under the vessel before the land is made. The coast north of Al 'Adeid is called Burr Kutr or Gatr, which name applies to the whole of the peninsula. It is under the authority of the Sheikh of Bahrein. The towns of Kutr send 200 boats to the pearl fishery, chiefly from Al Bida' and Wukrah. It is inhabited by, perhaps, nine or ten different tribes of Bedúin, of whom the Monásir bear a bad character.

The tides set north and south along the coast, but not very strong; the flood sets to the southward.

WUKRAH, a town lately rebuilt, and a very rising place, is close to the beach, and has 12 towers. It may have 1,000 inhabitants, and many boats belong to it. One mile to the southward, close to the shore, stands a little hill called Jebel Wukrah (85 feet); it is a level topped, rocky hill, of brown colour, visible 12 miles. The town may be approached to about 2 miles. Native boats run close up to the town, at high water, either through or over the reef. A ship would have to anchor 2 to $2\frac{1}{2}$ miles off shore, in 4 fathoms.

AL BIDA', and **DOHEH**, are two large towns close together, situated in a deep bay, the reefs off which make it a natural harbour. The land on the west side of the bay is 40 to 50 feet high, and a stony desert, quite level on the top; the south-east point of the bay is quite low.

* In September 1836, the E. I. C. ships *Coot* and *Elphinstone*, working up the coast from Khor al Adeid, stood off from the Fusht al Areif, on the port tack, about 17 miles, then tacked to the west; they had made about 5 miles when the *Elphinstone* touched the bottom: the *Coot* crossed the shoal in 3 fathoms.

Approaching from seaward, the high towers of Al Bida', one in particular, will be seen before the land; if too far to the southward, Jebel Wukrah would be first seen. The towers of Al Bida' are seen 8 to 9 miles, or not till in 4 to $3\frac{1}{2}$ fathoms.

Ras bel Mashút is the low, sandy, south-east point of Al Bida' bay, $6\frac{1}{2}$ miles north of Wukrah. From this point the coast runs for 5 miles to the bottom of the bay, on an average W. by N. East of it the shore reef projects only one mile.

Ras Bú Abút is a low point in the bay, $2\frac{1}{2}$ miles W.N.W. from the last. Off it there is little reef, but between it and Bel Mashút a great reef projects for $2\frac{1}{2}$ miles to northward, forming the south side of the entrance to the harbour; it is chiefly rocky, and has only a few feet on it at low water.

The entrance to the harbour, north of this reef, is only one-third of a mile broad, for half a mile of its length, with 4 and $4\frac{1}{2}$ fathoms in it.

The northern reef projects to south-eastward $1\frac{1}{2}$ miles, from a low sandy island with grass on it, called Jezíret as Sáfil or Sáfi.* This reef is chiefly of sand, and, outside the entrance, trends to north-east and northward, extending for some miles. Sáfil island is narrow, and about a mile long east and west; it bears N. by E. 3 miles from Ras Bú Abút. Within the entrance the harbour opens out into a basin about 3 miles in extent, with soundings from 3 to 6 fathoms, quite regular, over a bottom of white mud or clay.

Jezíret 'Alí† is a small island of a brown colour, with a little peak at its east end, lying $3\frac{1}{2}$ miles North of Sáfil; it is visible 6 or 7 miles. There is a little basin with deep water between these two islands. The peak is useful as a mark entering the harbour.

RAS NESSEH is a low projecting rocky point in the harbour, W. $\frac{1}{4}$ S. $1\frac{1}{2}$ miles from Bú Abút, with a small bay between them; a spit runs off 600 yards to northward, which is nearly dry at the end at low water. To the westward of this spit is a small bay in the reef, where the most convenient anchorage is, for communication with the towns; there are several shoal patches in it, which show plainly.

DOHEH is a town partly walled round, with several towers, half a mile S.W. by W. from Ras Nesseh; it extends about 800 yards along the beach. The Sheikh's house is at a large round tower (with the flagstaff) on the beach, about the centre of the town; to the west of this tower is a small bight, where boats are hauled up to repair. The reef dries off a quarter of a mile from the shore opposite this place. Between this town

* i.e. the lower island.

† i.e. the upper.

and Al Bida', and almost connected with Doheh, is a distinct town, recently built, called Doheh Saghíreh (Little Doheh), which has a new square fort at the south-west corner, built on the rising ground at the back of the town.

AL BIDA'.—There is only 400 yards open space between this town and Little Doheh ; the three towns together extend one mile along the coast. Bida' is built up the side of the rising ground ; there is a fort in the town, where the Sheikh's flag is shown, and two towers on the highest part of the land behind the town, one of which is the first thing seen from the sea. One mile and a half to south-eastward of the town is a tower near the wells, with a little cultivation ; with this exception the whole country is desert.

The Sheikh of Al Bida', who is under Bahrein, has some authority over the chiefs of the other two towns. The three towns together may contain 5,000 inhabitants, of the Uttúbí tribe. They are constantly at feud with the Bedúin, and it is not safe to be outside the walls after dark. They are also often molested by the Wahebbí chief, whose capital, Ríyáz, is 7 days' journey inland. *Water* is dear here and indifferent; the best is brought in skins from the desert, some distance from the town. There are few supplies. Firewood is brought from the interior, and also from Clarence strait. They have no large baghalahs, but many pearl boats, and the inhabitants are all employed in the pearl fishery.

Making the place.—A vessel coming from the northward could not sight the Kutr coast south of Ras Laffán; she should stand down the coast in a line of between 5 and 7 fathoms till Al Bida' bears by account W.S.W., when she should haul in for it, keeping a good look-out, till in 3 or 4 fathoms, outside which depth the town will not be seen. If coming from the north-eastward or south-eastward, she had better take a departure from Hálúl island, which is visible 14 miles, and should bear while in sight N.E. by E. $\frac{3}{4}$ E. If she should have been set by the tide either side of the place, she would make either Jezíret 'Ali, or Jebel Wukrah instead. There is an extensive flat outside the entrance to the harbour extending 4 miles beyond the reefs ; it has 8 fathoms close to, and there are 3 and $2\frac{3}{4}$ fathoms all over it ; bottom white sand. This is the principal difficulty for a ship to get over ; if drawing more than 12 feet, she should anchor on the edge, and wait for high water. The high water at full and change is about $7\frac{1}{2}$ h., rise and fall 6 feet.

To enter the Harbour.—This will be easiest done in the forenoon ; it is very difficult to see the reefs when entering the harbour in the afternoon, or leaving it in the forenoon. After sighting the high tower it should be brought to bear W.S.W., which is the fair way in. The shoalest part to

be passed over appears to be outside the opening between the reefs, or with Jebel Wukrah just open outside Ras bel Mashút, the south-east point of Bida' bay. The channel will be plainly seen from aloft; the northern shoal light green, the southern with patches of dark colour. When fairly in the narrow part of the channel the water deepens to 4 and $4\frac{1}{2}$ fathoms, and the difficulty is over. It is advisable to hug the weather reef, so that if you shoal suddenly you may be sure which side of the channel you are on. When the peak of Jezíret 'Ali is shut in behind Sáfil island you are clear of the reefs, and may steer for Al Bida' (the right hand town) across the bay, which is quite clear of danger outside Ras Nesseh. The soundings decrease regularly from 6 fathoms just inside the entrance to $3\frac{1}{2}$ opposite Ras Nesseh, which point will be seen in front of a part of Dohch town. When Ras Nesseh bears South look out for the point of the spit off it; if you bring Dohch large round tower on the beach S.W. by S. before bringing this point to bear South you will be well clear of it. When past Nesseh spit haul in for Dohch, and anchor in 3 fathoms outside the native vessels, with Dohch flagstaff tower S.S.W. $\frac{1}{2}$ W., and a little over half a mile off shore. With this tower S. by W. $\frac{1}{4}$ W., you would be on the edge of several shoal patches on the western side of the bay, beyond which all is shoal.

From Al Bida', the coast of the bay turns to north, and shoal water extends a mile off the beach: about 2 miles north of the anchorage, there is an opening in the reef, leading into a basin, about west of Sáfil island, with 3 fathoms in it.

It would hardly be practicable to work through the narrow part of the channel: there is often a land wind early in the morning, but it would not be felt out of sight of the coast.

North of Jezíret 'Ali is a little bight in the reef communicating with the basin on its south side, already mentioned; and 5 miles N.N.W. of the island, is a point of the main land projecting very little, and slightly elevated, being visible 8 or 9 miles: it is called Ras geh Tayfán.

For 17 miles north of this point, the shore reef extends from 5 to 7 miles off shore, with some outlying $2\frac{1}{2}$ fathom patches, 9 miles off: it projects farthest in lat. $25^{\circ} 32'$: some of the sand-banks near the edge of this reef are dry at low water.

RAS AN NÚF, a low rocky point; between this and the last is a slight bay, about 10 miles across, called Dúhet Lúseil; it is all shallow, but is frequented by the pearl boats, which run in over the reef for shelter in shemáls.

RAS MUTBAKH is a point 3 miles N.N.E. of the last; between them is the entrance to a small creek and backwater, called Khor Shejíf; the

entrance to which has only one fathom at low water. The 3 fathoms line is 4 miles off this point, under which depth there is foul ground ; there is a dry sand-bank, 3 miles E. by S. of the point. Three and a half miles north of Mutbakh is another little creek, called Khor Thakhíreh, which is also shoal.

RAS LAFFÁN is a very low, sandy point, 23 miles S.E. $\frac{1}{2}$ S. from Ras Rekken ; there is very little reef off it : at this point the coast changes its direction, and runs to north-westward as far as Ras Rekken.

HOWEÏLEH is a small town and fort 6 miles W.N.W. of Ras Laffán. The coast makes a small bay here, in which the reef extends $1\frac{1}{2}$ miles off shore. It has a square fort visible 8 miles. The people are employed in the pearl fishery. The north point of the little bay is called Ras al Marúneh, close to the southward of which the pearl boats find shelter during a shemál.

FUWEÏRAT, a small walled town with several towers, 12 miles N.W. of Ras Laffán, standing on a small khor ; it has some white sand-hills immediately to the northward of it. The people of these towns are of the Abú Kawára tribe.

RAS UMM HASA is a point 8 miles S.E. of Ras Rekken ; a small rocky hillock stands on it, visible about 5 miles ; the reef extends about a mile off shore. Close under this point is shelter for boats in a shemál.

RAS REKKEN is the north-west point of a T-shaped island, and the north extreme of the peninsula of Kutr. It is very low, and has tufts of grass on it, and some small mangroves on the south side ; it is 2 miles in length, nearly east and west, and very narrow ; the reef extends off it 1 to $1\frac{1}{2}$ miles. Between the island and the main is a shallow strait $1\frac{1}{4}$ miles broad, mostly dry at low water, into which boats run for shelter. Four and a half miles S.E. by E. from Ras Rekken is a small mound on the main land, only visible about 5 miles. No kind of vegetation is to be seen on the coast. North of this cape, 5 fathoms are $2\frac{1}{2}$ miles off, and the soundings decrease pretty regularly towards the reef.

The bottom, between this point and Al Bida', is white sand or rock near the shore, and shows well in the clear water.

AR RUEÏS is a small town on the main, $21\frac{1}{2}$ miles south of Ras Rekken ; it has four towers on the fort, which is the first thing seen from the northward when making the land. They have many boats, which run in over the reef, and anchor in shelter close to the beach. The fort is visible 6 or 7 miles.

HÁLÚL ISLAND lies 72 miles S.E. by E. $\frac{1}{2}$ E. from Ras Rekken ; it is barely 1 mile across, and is hilly ; its highest peak being 180 feet, and visible 14 to 15 miles. It cannot well be mistaken, being so far from all the other islands ; there is a little reef round it extending nowhere more than $1\frac{1}{2}$ to 2 cables off shore. The best anchorage is on the south-east side, in 8 fathoms, half a mile off shore, but much swell rolls round the island in a shemál. There is a good landing place, where there is very little reef, in a gap in the low cliff, to the left of a small sandy beach on the south-east side. The island is quite barren, and there is no water ; it is visited by the pearl boats.

The soundings are not much guide approaching this island ; there are great overfalls everywhere round it ; 14 fathoms are about a mile off. The edge of the Pearl bank is just outside this island.

The dangerous Shah Allum shoal is 45 miles N. $\frac{1}{2}$ E. of this island (see page 192).

CHAPTER VIII.

SOUTH SIDE OF PERSIAN GULF.—RAS REKKEN TO BUBÍYÁN ISLAND
(END OF ARAB COAST).VARIATION, $1^{\circ} 50'$ to $2^{\circ} 0'$, West in 1864.

GENERAL OBSERVATIONS.—The coast, the whole way, continues a low, sandy, or stony desert, with a few little hills now and then. The only vegetation, except near Katíf, and one or two other towns, where there are date trees, is the coarse grass growing in tufts on the sand-hills, and small brushwood in parts. It is fronted by extensive reefs till within 70 miles of Koweit; and many islets, all, except Bahreïn, small and low, lie off it at considerable distances. Excepting some of the towns, it is never visited by Europeans. Large tracts of the coast are without towns or fixed inhabitants, and it would not be safe to land on the main, away from the towns, without an armed party.

The tide hour varies from about 5 hours, at Ras Rekken, to $12\frac{1}{4}$ at Koweit; rise and fall, 6 to 9 feet: the stream is felt everywhere on the pearl bank, especially round reefs and islands, &c. The flood sets across West from Rekken to the coast near Ras Tanúreh: near which, it seems to split, running to north-westward towards Koweit, and to southward into Dúhet Selwah. It also sets to the south along the Kutr coast.

RAS REKKEN to RAS TANÚREH. General Description.—The coast forms a bay, 60 miles broad, between these points, by 80 miles long, north and south; in which lie the large and fertile islands called Bahreïn. South of the parallel of 26° , this bay is only very cursorily explored; it is much blocked up by shoals, and it is doubtful whether there are any ship channels. No European vessel has ever been there. The authors have not visited any part of the bay south of the parallel of Ras Rekken, and the account in Capt. Brucks' Memoir* is very meagre. The coast runs from Ras Rekken, about S.S.W. 70 miles to the bottom of this bay: it forms the west coast of the Kutr peninsula, and is under the Bahreïn government.

RAS BÚ 'AMRÁN is a low point S.W. by S. $2\frac{1}{2}$ miles from Ras Rekken; the coast line runs from it E. by N. 5 miles, and S.W. for

* From which this description of that part is chiefly compiled.

10 miles, past Khor Hasán. The shore reef extends off this point nearly 2 miles, and $1\frac{1}{4}$ miles S.S.W. from it, is the village and fort of Abú Thalúf.

KHOR HASÁN, a small town and fort on the coast, $9\frac{1}{2}$ miles S.W. of Ras Rekken. It was the seat of the pirate chief Ramah Bin Jahber, who blew his vessel up in action, in 1826. Between this place and Bú Thalúf are two little villages on the coast: Al Yúsfiyeh, 4 miles; and Yamíl, 3 miles from Khor Hasán. Three miles to southward of Khor Hasán is the little village of Faríheh.

The shore reef extends about 2 miles off shore at this part, and there is a 4 fathoms channel, about 8 miles broad, between the land and the Díbal shoal.

FUSHT AD DÍBAL is a shoal about 5 miles in length north and south, by $2\frac{1}{2}$ broad, dry in parts at low water; its northern edge is W. by N. $\frac{1}{2}$ N. 17 miles from Ras Rekken. Two miles to south-westward, and separated from it by a 3 fathoms channel, is a smaller shoal called Jarádeh. Boats find shelter to leeward of these shoals in shemáls. West of the Díbal there is a channel, 10 to 12 miles wide, between it and Bahreïn island, with seven fathoms; but to south-westward of this shoal the sea has not been sounded. There are said to be numerous shoals.

RAS 'ASHÍRAJ is a low rocky point, 16 miles S.W. of Ras Rekken, to the eastward of which is a bay $1\frac{1}{2}$ miles deep, but shallow. On the east side of this bay stands the once very important town of Zabáreh, of which the ruins are still to be seen; the present place, though comparatively insignificant, is the largest, on this side of Rekken, having about 1,500 men of the Uttúbí, Alassar (?) and Abú Kawará tribes. The people of the other towns in the neighbourhood are of the same tribes. Two miles below this point is a village called Ar Rabeijah, the southernmost place on this coast. South of a line between Ras 'Ashíraj and Bahreïn island, there appears to be no more than 3 fathoms water, with numerous little shoal patches scattered about. The coast from that point runs S. by W. for 28 miles, to the bottom of a large shallow inlet called, on Capt. Guy's chart, Dúhet al Afzan; it is 9 miles in length, and the deepest water in it is 2 fathoms.

On the west side of the entrance to this inlet is a group of islands, little explored, the largest of which is called Hawár, and is about 10 miles long, and frequented by fishermen.

There is no channel inside these islands, and, outside them, there is a gap in the survey, which leaves it undecided whether or no there is any channel between them and Bahreïn island.

RAS SAWÁD is the point of the main nearest the above islands, on the west side of Dúhet al Afzan, and from this the coast runs about 30 miles

to S. by W., forming the east coast of Dúhet Selwah. This coast, from some distance to northward of this point, is, by native report, of moderately elevated stony hills. The extent of Dúhet Selwah to the southward has not been determined.* The few soundings taken in this bay show that great overfalls exist.† The west side of Selwah gulf has a north-north-west direction, for about 30 miles, to a point forming the south side of a bay, in which lies Jezíret Zukhnúníyeh. The coast on this side of the gulf is a range of sand-hills, of which one is called Jebel Mowah (?). Zukhnúníyeh is about 4 miles long, and has a village and fort on it, belonging to Bahreïn. There is a shallow channel between it and the main.

'AJEÏR (or 'Ujeïr) is a small fort close to the sea, and the seaport of the Wahebbí, formerly a town, but now very insignificant. It lies at the head of a cove, running N.N.W. about 4 miles from the north end of the bay, in which Zukhnúníyeh island lies. The east side of the cove is formed by a long, low, sandy point, the south end of which is called Ras Seyáh. The entrance to the cove lies between this point and the north end of Zukhnúníyeh.

The fort stands in a perfect desert; but some water is obtained in shallow wells in the sand. From this place, the south end of Bahreïn island bears about E.N.E., only 14 miles distant. From the few soundings shown on Captain Guy's chart the depths between appear irregular, over mostly soft bottom, 4 to 14 fathoms. The Beni Nayim Bedúin, who occupy the country between this place and Kutr, are reported not to be hostile to strangers, and to be the most powerful tribe in Kutr.

The coast continues from Ras Seyáh about N.N.W., for 20 miles, to the entrance to Dúhet Thalúm, a large, shallow bay, about 7 miles in extent, without any inhabitants. At the south side of the entrance to this bay is a sand-hill, used as a landmark, called Hamadíyeh. The natives say, there is a small lake of fresh water, 2 or 3 miles inland of this. The north, low, extreme point of the bay has a ruined fort on it, called Gareyah.

Seven miles north of Gareyah point is a small, shallow cove, called Dúhet 'Ain as Siyeh, which has a detached shoal off the entrance; and 2 or 3 miles north of this, and about west of the north end of Bahreïn island, are two hillocks called Zabanat, they are a little back from the coast, from which the nearest part of Bahreïn island is distant only 10 or 11 miles. The passage between is shallow, and much blocked up by reefs. Jil'at al Haseïn, or Laseïn is a small fort 6 miles north of these hills, inhabited by

* Capt. Brucks was of opinion it extended farther south than shown on the chart.

† The Arabs say there are extensive ruins at the bottom of this gulf; whether ancient or modern is not known.

a few fishermen ; and, just above it, is a point called Ras Chawáchab, which bears S. by E. $17\frac{1}{2}$ miles from Ras Tanúreh, and is the south point of Katíf bay. Near the coast below Laseín is a district called Leílíyah, which is said to have much fresh water, and many date plantations. From this point to the bottom of Dúhet Selwah, the coast has no permanent inhabitants. It is under the Wahebbí Amúr, and is frequented by many Bedúin tribes, of whom no particulars are known. A great reef extends 8 miles off Ras Chawáchab to east and north-eastward, with a dry sand-bank near its outer edge, called Chaschús. Inland, a few miles from this point, is a range of hills with two principal peaks : the north-western is a sugar-loaf, or conical hill, 416 feet high, called Methrah, bearing S. by W. $\frac{1}{2}$ W. 17 miles from Ras Tanúreh ; the other called Jebel Dharán, a flat-topped hill, 500 feet high, 18 miles S. $\frac{1}{2}$ W. from that point. They are visible about 23 miles.

BAHREIN ISLAND (formerly called Awal) is about 27 miles in length north and south, by 10 in breadth. Towards the centre, there is some slightly elevated rocky table land ; and, 12 miles from the north end, is a small mass of volcanic hills called Jebel Dukhán, about 400 feet high, visible 21 miles, and forming in a square lump. The shores of the island are low, and along the north end is a belt, 2 or 3 miles wide, of very fertile land, with abundant fresh water springs, and covered with date groves, &c. The principal town, called Manámeh, is at the north-east corner ; and is the capital of the chief of the great Uttúbí tribe. The total population of the islands is estimated by Captain Kembal,* at 50,000. Excepting the northern portion, great part of the island is barren, but there many villages in different parts.

MANÁMEH, a large town on the north-east point of the island, with perhaps 8,000 inhabitants, is built along the shore for about three-quarters of a mile ; the houses are mostly poor ; the only conspicuous building being the Sheik's house, which is a high semi-fortified building near the west end of the town, on which the flag is shown : close to the east of it is a small minaret, only seen when in the inner anchorage. The north-east point of the town, forming the left extreme, is called Ras Rúmán : half a mile south of this, is a clump of dates behind the town standing on a little rising ground.

The landing at the town, though better than at any other part of the island, is inconvenient, except at high water ; the shore reef being very shelving, boats cannot come within a quarter of a mile of the beach at low water. Donkeys are always brought down to assist persons

* Lately Political Resident in the Persian gulf.

landing and to unload goods, &c. The following supplies are procurable : *Water*, in plenty, and of good quality ; if you have no water casks, see that the large wooden tank it is brought off in, is clean ; bullocks, sheep, and poultry, vegetables and fruit, Arab bread, flour, rice, &c., and other articles for use on board ship, except biscuit, spirits, and salt meat ; firewood, but not for steam purposes ; teak timber for repairs, but very dear ; no ironwork. A baghalah's mast might be got, as a substitute for a broken spar, of heavy wood (peon).

The chief is very friendly to the English government, who support him against the aggressions of the Wahebbí Amír. There is a British agent, who is an Arab ; and many Banyans are settled here. The inhabitants of this town, of Maharag and al Hed, are chiefly employed in the pearl fishery, to which altogether 400 boats are sent from these islands ; but there is a large agricultural population. Owing to the numerous springs of water on the north part of the island, which are carefully employed in irrigation, it is very fertile ; and the verdure, so unusual in this country, has a very pleasing effect. There are great numbers of fruit trees, as citrons, limes, &c. ; and very fine date plantations ; much lucerne is grown for forage. The island produces quantities of dates, which are exported to other parts of Arabia, and India. The other exports are : pearls, a few of the finest horses in the world, and some remarkably fine asses, to India and Maskat. Cotton sail cloth for baghalahs is made here of very good quality, and exported to Koweit, Basrah, and to India. The only other manufactures are : coarse cloth for turbans, &c., and mats made of the date leaf, of fine texture.

Some trade is carried on with India, many fine baghalahs belonging to the port. They have 200 vessels from 20 to 300 tons, besides the smaller ones. The Sheikh has some fine war vessels, chiefly Batíls, which are very fast sailers ; his large baghalah, the *Duniyah*, which is now employed in trade, mounted 10 guns. The imports are : Rice, timber, and other materials for ship-building, and piece goods, &c. from India ; and coffee from the Red Sea. Near the ruined mosque, with the two minarets, are the ruins of a considerable town, much better built than the present one, called Beled al Jedím (the old town) ; there are also some well built baths over some of the springs. It, therefore, appears to have fallen off in prosperity since earlier times. There are still many villages on the island in different parts ; but, according to all accounts, few compared with the number formerly existing. The largest spring on the island issues from a reservoir about 30 feet deep, and 30 yards across, in a stream 6 or 8 feet wide, and 2 feet deep, which will give an idea of the supply of water on the island : it is about one mile S.W. of the minarets.

Near the mosque, a fair is held every Friday, for the sale of horses, cattle, fruit, &c., which is frequented by a large number of people.

Portuguese Fort, called by the natives Jiblíah (and other names) is nearly 3 miles, W. $\frac{1}{4}$ N., from the Sheikh's house at Manámeh. The Arabs know nothing of its origin.* It is exceedingly dilapidated, and, within the enceinte, stand the ruins of many large buildings (query, barracks, governor's house, factory, &c.). It stands in a gap in the date trees, 150 yards from the beach, its highest part being about 80 feet above the sea. From seaward, it makes in three principal lumps of light colour ; quite shapeless. Nearly 1 mile N.N.W. of the fort, is a small rock above water on the reef, to which Capt. Brucks gave the name of lighthouse rock, from a notion that the Portuguese had one on it.

The whole of the coast between this and Manámeh, which forms a bay, is lined with thick date groves : on the coast, 1 mile from Manámeh, is a fishing village called Nayim.

Nearly equidistant between the fort and town, and 1 mile from the shore, stands a large ruined mosque with two minarets.† These are useful marks for the harbour, being seen over the date trees, until near the inner harbour.

From the Portuguese fort, the coast of the island runs west $2\frac{1}{4}$ miles, and S.W. by W., $2\frac{1}{4}$ more, when it turns to the southward : at the west point, is a tower and little village called Bidíá'. Off the west coast, about 4 miles S.W. of Bidíá' point, is a large island, called Umm an Hasán ; it is low, and has two small peaks on it. North of it are two islets ; there appears to be no passage between these and Bahrein island.

The west coast of the island runs, in an average south direction, for 27 miles, according to the chart by Lieuts. Brucks and Rogers, and is little known : about 10 miles south of Bidíá', is a village and fort called Zalák. From the south point of the island, which is called Ras al Bar, the coast turns to north-east and north, and is also almost unknown. About 12 miles from Ras al Bar, are some extensive ruins, called Yaú.

* The chief actually asked us for some information as to who built it, and when it was built, &c. It is similar to the other Portuguese forts in the gulf, viz. a regular bastioned fortification of the 16th century, with moat, &c., embrasures in the parapets, and casemated embrasures in the re-entering angles of the bastions. It was probably built soon after 1521, when the Portuguese made their first expedition against Bahrein. It has been partly built of the materials of some other building, probably a mosque ; as a great number of stones, in the south face, are covered with carvings and inscriptions in the old Arabic, or Cufic (?) character.

† This mosque is quite ruinous, and probably of the date of the Persian conquest of Bahrein, being a Shíah mosque, from the name of 'Ali being joined with that of their prophet in the profession of faith, in some inscriptions there. The Persians are, as is well known, all of the Shíah sect of Mohammadans, while the Arabs and Turks are Súnís and do not venerate the name of 'Ali.

From Ras Rúmán, the north-east point of the island, the coast runs to south-eastward : about three-quarters of a mile from it, is a low sandy point, with a little fishing village, called Hálat an Namas ; beyond which it forms a bay, the south point of which, called Ras al Jasrah, is 2 miles S.E. $\frac{1}{2}$ S. from Ras Rúmán. There is a village, and detached date grove, on this point, and a fresh water spring on the beach, below high water level.

At this point the coast turns to the westward, forming the north side of an extensive, shallow backwater, running west, about 5 miles into the island. On the south side of the entrance, which is $1\frac{1}{2}$ miles wide, is a large island called Sitrah 4 miles long north and south, and $1\frac{1}{2}$ broad, with only a narrow, shallow khor between its south side and Bahreïn. Its northern half is covered with high date trees, the eastern extreme of which terminates abruptly like a cliff or bluff. There is a village and fort of the same name in the grove, and at the south end of the island is a small fishing village called Mahámeh. Two miles S.W. from Jasrah point is a small island in the backwater about half a mile in extent, and covered with date trees ; it is called Nebbí Sáleh. From Sitrah island the coast runs in a south and south-west direction to Ras al Bar.

INTERIOR.—Four miles from the north coast commences some moderately elevated rocky table land (100 to 150 feet), which extends nearly across the island, and for many miles to the southward ; it is terminated on all sides by little cliffs. On it, nearly 7 miles S. $\frac{1}{2}$ W., from Manámeh, stand the village and hill fort of Ruf'ah, which has several towers and is seen over the date trees when entering the harbour.

JEBEL DUHÁN is a small lump of hills of volcanic appearance standing near the centre of the island, about 400 feet high ; it is level on top, with jagged outline, and a bluff on each side. Its centre is S. $\frac{3}{4}$ W. nearly 12 miles from Manámeh, and in clear weather it is the first land seen from seaward.

MAHARAG ISLAND lies to north-eastward of Bahreïn, being separated from it by a strait, in one part only a mile in breadth, and nearly all shallow. It consists of a strip of low sand, averaging half a mile in width, and of horse-shoe form, the convex side to the north ; it is 3 miles in breadth east and west, and nearly 5 miles long from the north coast to the extreme south-east point. On the south-west point lies the town of Maharag, which is about as large and populous as Manámeh, and is about half a mile in length and breadth. At its south end, on a small low piece of ground, which at high water is separated from the town, stands a square fort with four towers, called Maharag ; and a quarter of a mile E.S.E. of this is a fresh water spring under the sea, having always a fathom of salt water

over it, from which the town is principally supplied with water ; it is called Bú Mahah.*

Around the north end of this island, are four clumps of date trees, which are the first objects seen, when making the place ; unless in very clear weather, when Jebel Dukhán will be seen a little before them. They are visible 10 or 11 miles from the deck.

Each of these clumps has a name, and they are useful landmarks in entering the harbour. The western, which shuts in behind the others, when bearing S.W. by S., is called Bisetín, from a little fishing village close to it on the beach. It is 2 miles north from Maharag fort, and has one tree in the middle a little higher than the rest.

Sayeh is a small islet on the shore reef, $\frac{3}{4}$ of a mile from the beach, west of this clump. It is about 20 yards across, of light colour, and only a few feet above high water level, and has a spring and basin of fresh water on it, which is quite fresh, except when the sea gets into it at high water springs ; at low water the reef round this islet is dry.

On the north side of Maharag island are three clumps, all within the space of a mile. The western, called Ad Dír, has a small village in it, and a little building on a hillock close to eastward of it. The centre, and northernmost, is called Reyah,† and the third clump Samáhi. There are a few huts at each of the two last, and a fine spring of water at Reyah.

Khaseifeh is a little rocky islet on the reef, about 700 yards north of Ad Dír ; between it and the shore are three little springs on the reef, uncovered at low tide, from which the village is supplied with water.

Galáleh, a fishing village, with a square tower on a sandy hillock, stands on a point $1\frac{1}{2}$ miles S.E. by E. from Reyah. Three-quarters of a mile N.E. of it is an islet on the reef, with the remains of a building, and two fresh-water springs near it, which is called Irtheh.

From this place the strip of sand forming the island runs south for $3\frac{1}{2}$ miles, terminating in a very low sandy point. Zimmí is a small date clump, with a few huts, $1\frac{1}{4}$ miles from Galáleh ; just south of this is a very large fishing village, called Al Hed, and half a mile from this last, near the extreme south point, a small village, called Musheir ; the tide sometimes overflowing the ground between these two villages. Opposite Hed village is an islet on the reef, a quarter of a mile off shore, with a fresh-water spring on it, called Bú Shahín.

* These submarine springs are characteristic of these islands ; several will be described in the sequel : the water is often obtained by merely putting down a hollow bamboo, when the fresh water will rise through it above the surface of the sea. Lieut. Whish, I. N., in 1859 obtained a supply (in shoaler water), by means of a spirit pump.

† This is the clump of trees, called Arad bluff by Capt. Brucks ; which name appears inappropriate, as the trees stand on low land, nearly at the water's edge. The meaning was, that the appearance of the trees, from a distance, resembled a bluff hill.

The centre part of Maharag island, or hollow part of the horseshoe, is overflowed only at high water; and in the middle, East of Maharag town, is an island, three-quarters of a mile in extent, called 'Arad. It has a date grove and a large double fort on it.

The **HARBOUR** of Bahreïn is formed by the reefs extending off that island and Maharag, and by a great reef lying to the northward of them, called Fusht al Yárem. The reefs are all flat, and the bottom stony, chiefly of white colour; they generally show well. The fish-weirs on all of them are some guide, except at high water, when they are covered.

The Bahreïn island reef extends only a quarter of a mile off opposite Manámeh town, there being a bight in the reef here which enables the native vessels to lie near the town; with the Sheikh's house S.E. $\frac{1}{2}$ E. a point of it projects half a mile from the shore. It increases in extent to the westward, and towards the Portuguese fort is 1 to $1\frac{1}{4}$ miles in breadth; and, north of that fort, foul ground extends 2 miles off, with a boat channel just outside the Lighthouse rock. Part of this detached patch is dry at low water, and is called Leyah; there is a narrow channel leading to the westward, just north of it, with a 2 fathoms flat between it and the Khor al Báb. This channel has not been explored farther to the west; Brucks' chart shows it as ending in a basin, but probably there is a passage through the reefs towards the main. The minarets in one with Ruf'ah fort will keep a vessel just clear of Leyah shoal, and of the 2 fathoms bank north of it. The Khor al Báb is the passage south of the Yárem shoal, and is described at page 121.

Maharag island reef is very extensive, and has a shallow channel through it, on its west side, to the town of Maharag, and to Khor Jalíyeh. The natives give names to different parts of this reef, but there appears to be no general name for the whole. On the east side of Maharag island, according to Brucks' chart, it extends from $1\frac{1}{2}$ to 2 miles off, with soundings decreasing gradually from 6 fathoms at about 1 mile off. N.E. of Galáleh, a point of the reef, called Kashásheh, extends about two miles off, in the direction of Irtheh islet.

RAS KHASEÏFEH, is the north-west point of this reef, and the principal danger in entering the harbour, being generally a lee shore, and extending so far from the land. The reef dries off from Maharag island in a north-west direction nearly 2 miles, and, outside this, is an extensive spit, with only $2\frac{1}{2}$ fathoms at $3\frac{1}{2}$ miles distance from the island, the depth on it decreasing towards the dry reef. With Galáleh tower just shutting in behind Samáhi date grove, you are on the pitch of this spit.

From this point the edge of the shoal runs to southward, with 4 to 6 fathoms very near it for $2\frac{1}{2}$ miles, to the entrance to Maharag Khor: a

mark for the entrance of which, is Sayeh islet, E. by S. $\frac{1}{2}$ S., or in one with the south end of Bisetín village. This Khor runs to south-eastward to Maharag town, but is very shoal, having in some parts only 3 or 4 feet at low water.

On the same bearing of Sayeh, there is a 9 foot patch, $2\frac{1}{2}$ miles from Bisetín ; and from this, the edge of the foul ground runs about south to Ras Zarwán. The minarets in one with Jebel Dukhán, lead 800 yards clear to the westward of this danger.

The anchorage for large ships, would be just to south-westward of this patch, in 4 fathoms, with Sayeh on with Bisetín clump ; and the minarets seen between Jebel Dukhán and Rufa'h fort.

RAS ZARWÁN is the west point of the reef, which forms the north side of the inner anchorage ; its outer tip is $1\frac{1}{2}$ miles N.W. by N. from Manámeh (Sheikh's house). When off the pitch, Sayeh is just touching the north-west extreme of Maharag island. The great body of the reef at this point shows well, but the extreme outer patch, which is detached, and has a little more water on it, is not so clearly seen. There are 3 to $3\frac{1}{2}$ fathoms at low water, in this part of the harbour, which is only half a mile broad. The inner anchorage is round this point, in $2\frac{3}{4}$ to 3 fathoms, just outside the native vessels, rather more than a mile off shore ; with a little minaret just open to the left of the Sheikh's house. The edge of the reef runs from Zarwán to S. E. by E. for $1\frac{1}{4}$ miles, forming the north side of the inner harbour, which shoals regularly towards the town. The anchorage is close over to the Zarwán side ; the southern part of the bay towards Nayim, and the Portuguese fort, being shoal. The whole outer harbour, or belt of deep water between the reefs, is called Saleisel. The bottom is mud and sand, in the inner anchorage, good holding ground ; in the outer part, sand and shells. South of a line drawn W. by S. from Maharag north date grove (Reyah), the depths are under three fathoms. N.W. of Ras Khaseifeh, the greatest depth is 4 fathoms : to the southward of this line, the soundings are from 5 to 7 fathoms, shoaling to 3 and 4 close to the reefs, but in places, 7 fathoms are found very near the reefs. Outside that line, in the entrance of the harbour, the soundings are 4 to 5 fathoms.

FUSHT AL YÁREM, the extensive reef forming the shelter to the harbour against the shemál, is only partially explored ; its extent in a north-west and north direction, is not satisfactorily determined : the outline delineated on Capt. Brucks' chart is only approximate, it is probably 10 miles broad, by 15 in length north and south. Its north-east point, called Ras Shagháb, is the chief danger to be avoided in making the place, as it is out of sight of land ; it is 16 miles N. $\frac{1}{4}$ W. from Reyah date

trees, and has 4 fathoms close to ; 6 fathoms are about a mile off this point to the eastward, and 8 fathoms, 4 miles off.

From it, the edge of the shoal runs to southward for 10 miles, to the south-east point, off which lies a detached patch, least water $2\frac{1}{2}$ fathoms, the outer edge of which bears N. by E., 6 miles, from Reyah date grove ; a vessel of light draught might cross this, as it would be a good guide to her position, with regard to the south-east point of the Yárem.

From this south-east point the reef takes a south-west direction for 7 miles, to the south point called Jádúm : this is on the north side of the entrance to the Khor al Báḅ, and from it the reef has an average direction of N.W. by N. for 9 or 10 miles, as far as the north-west point, and forms the east side of that passage. The north edge is only approximately determined.

The Yárem is chiefly of white sand, or soft white stone ; and on the northern edge there are many dark patches of rock on it. It is dry in parts at low water ; some of the rocks on the north part uncover at half tide. The whole reef generally shows well, especially with the sun behind you.

TIDES.—The tides on the pearl bank, north of the Yárem shoal, set about east and west, and influence a ship's course across the gulf, often considerably. Along the east side of that shoal, they set north and south, and follow the bend of the harbour, setting into and out of it ; the flood also sets to south-eastward, between Maharag and Bahreïn islands, and to north-westward through the Khor al Báḅ. It sets to the southward, outside Maharag island. Its velocity in the harbour is from one to two knots. High water on full and change is at $5\frac{1}{2}$ hours ; rise and fall 7 feet. The amount of the rise, and the depths of the water, are dependent to a certain extent on the wind, whether a north-wester or a south-easter.

DIRECTIONS.—When bound to Bahreïn from the northward, (Bú-shehr, &c.,) if a large vessel, she would have to avoid Rennie shoal* A departure had best be taken from Jebel Dreng, which should bear about N.E., in 20 to 30 fathoms water ; from which position, a S.S.W. course will take her well clear of that shoal, and, according to the tide, she would strike either the Bú Amámah or Bú Athámah pearl bank. If drawing less than 15 feet, she may steer a direct course for these banks from Bú-shehr outer roads.

If she shoal suddenly from 35 fathoms to 12, and perhaps 6 on the pearl bank, deepening again when over it to 20 and 25, she has passed over the eastern or Bú Athámah bank ; but if she shoal gradually to 20, then quickly to 9 or 8, afterwards deepening only to 12 or 13, she has struck

* See page 125, least water 17 feet.

the Bú Amámah, and must then steer South, so as not to sight Maharag island on a bearing to the southward of S.S.W. To the east south-eastward of the two pearl banks mentioned above, there is a space of 30 or 40 miles, east and west, on the edge of the pearl bank, to the eastward of the meridian of 51° , with overfalls of from 9 to 20 fathoms, called Abú Kharáb.

The soundings, after deepening over the pearl bank, shoal again soon to 8 and 7 fathoms, and she may get a cast of 5, on the little bank shown on the chart, in which case she is sure of her position.

A good look out should be kept from aloft ; the edge of the Yárem will probably be seen, by the pale green water, especially in the morning.*

The date trees on Maharag, Jebel Dukhán, and Ruf'ah fort will be sighted nearly at the same time if the weather be clear.

For a large vessel : centre of Dukhán on with Samáhi, the eastern of the three clumps first seen, is a good leading mark for clearing the detached $2\frac{1}{2}$ fathoms patch off the south-east point of the Yárem ; and she must keep this mark on (or the trees bearing S.S.W.) until she is sure of being to the southward of that patch.

A small vessel might run over this patch by keeping Dukhán on with Bisetín trees, the westernmost clump on Maharag, hauling up to south-westward as soon as she deepened over it.

Entering the Harbour.—The winds being north-westerly during the greater portion of the year, are generally fair for running in : in the morning a vessel might have to work in against the land wind. In the morning it is advisable to hug the Yárem side, as the Maharag reef would not be seen under the sun ; in the afternoon the reverse is the case.

It would not be advisable for a vessel with a north-westerly wind to stand down towards Maharag on the S. by W. $\frac{3}{4}$ W. course after being clear of the south-east point of the Yárem, as she might not be able to weather Ras Khascifeh. There is no cross bearing to tell when you are past the south-east corner of the Yárem : the distance off Maharag, if the edge of the Yárem cannot be seen from aloft, must be the guide, or when Bisetín grove and Galáleh tower, the right and left hand objects visible on Maharag, subtend an angle of not less than 19° , you must be South of the detached patch. You may then haul up to S.W. by W. $\frac{1}{2}$ W. or W.S.W. until the two minarets are in one with Jebel Dukhán, when you are in the

* These directions are thus given, as the place has often to be made before the morning sights, and the tides are apt to set a vessel either to eastward, or westward. In the former case, the north-east point of the Yárem would be a danger ; in the latter, she might make the Dibal shoal (a set of 9 miles either way would be sufficient for this). If attention be paid to the soundings, as given above, her position can hardly be a matter of doubt.

fairway and may steer for them : as soon as Galáleh tower shuts in behind Reyah grove you are past the most projecting part of Ras Khaseifeh, the north-west spit off Maharag island. A ship drawing more than 15 or 16 feet, should anchor with Sayeh rocky islet on with Bisetín clump in $3\frac{1}{2}$ to 4 fathoms, and 3 miles from the town. It is more convenient for a small vessel to go into the inner anchorage, where she will be only a mile from the town ; to do so ; when Bisetín clump bears East, stand S. by E., looking out for the Zarwán point of the reef, which will be well seen from aloft ; when past it, or, when Sayeh islet opens out clear to the north of Maharag island, and the Sheikh's house bears S.E. $\frac{1}{2}$ S., haul in for the native boats, and anchor a little outside them, close over to the Zarwán side, in $2\frac{1}{2}$ to 3 fathoms.

The minarets will have been lost sight of from the deck, behind the trees, before reaching Zarwán, perhaps from aloft they might be kept in sight.

In working out of the inner anchorage, which will generally have to be done, unless any land wind there may be early in the morning be taken advantage of, very short tacks must be made till past Ras Zarwán, there being less than half a mile of clear channel to work in. The west side of Maharag reef, south of Ras Khaseifeh, is steep-to, 6 fathoms, in some parts, being close to its edge ; the eye must be the chief guide. After passing Zarwán, the minarets on with Ruf'ah fort, is a good tacking mark on the west side of the harbour, till past the Jádúm point of the Yárem shoal.

Between the south side of Maharag and the north-east side of Bahreïn island is an inlet, or Khor, from half to one mile wide, with soundings of 3 to 6 fathoms, which runs close up to Maharag town, and is much used by native vessels ; the approaches have not been examined, and it has never been used by European vessels. The shallow Maharag creek, already mentioned, joins this with Bahreïn harbour ; but large native vessels have to go round outside Maharag island. The eye must be the guide, attempting to enter this south-east harbour, as it has been called, until a survey has been made. The natives call it Khor Jalíyeh. Its entrance is round the point of the reef, which extends 4 miles to south-eastward from Al Hed village on Maharag island.

KHOR AL BÁB is the name given to the passage south of the Fusht al Yárem, leading from Bahreïn to Katíf. It has been partly examined by Lieut. Whish, I. N. ; pilots can be obtained in Bahreïn to take a vessel drawing 16 feet water through. The entrance to it is on the west side of Bahreïn harbour, round the Jádúm, or south point of the Yárem ; when in the entrance, the Portuguese fort is in one with Jebel Dukhán,

and Reyah date trees bear E. by S. The pilots always get a shoal cast on the south end of the Jádúm, so as to be sure which side they are on, and then bear up to south-westward into the Khor. The direction of the Khor is N.W. by N., and the average breadth a mile, with soundings of $3\frac{1}{2}$ to 5 fathoms.

Three miles within the entrance is a branch of the Khor to westward, on the reef, on the south side of which, is a small sand-bank, hardly covered at high water, which always has flocks of birds on it, called Marwádi. On the north side of this branch channel is a reef called Khor-fusht, which has several sand-banks on it, and a remarkable spring of *fresh water* on its southern edge, which has always 2 or 3 feet on it at low water. It is difficult to find, except at low water, when the sea is smooth. A transit mark for it is the Portuguese fort in one with the highest part of Marwádi sand.*

The Khor-fusht reef, on its east side, towards the Khor al Báb is very steep-to, but shows plainly, while you shoal more gradually on the Yárem side. On the Yárem reef, about 2 miles from its western edge, is a rock or islet, dry at high water, $11\frac{1}{2}$ miles N. $\frac{3}{4}$ W. from the Portuguese fort. It is called J'ilahat, and tradition says there was once a fort on it, of which, however, there are now no traces. When this bears N.E. by E. you are clear to northward of the Khor-fusht. This rock and the Marwádi sand are useful marks in beating through the Khor.

The best channel then lies between the shore reef, extending off the point south of Katíf, called Ras Chawáchab (page 112), the Chaschús sand, near the outer edge of which is some guide to its position, and a detached shoal, called Najweh, with a dry sand-bank on it, about 7 miles S.E. of Ras Tanúreh. There is a channel also to the northward of this last shoal, between it and the Yárem, but the other is generally preferred by the Arabs, being more sheltered, as well as more direct.

A projecting point of the shore reef, about 7 miles south of Ras Tanúreh, is called Ras al Khalí, and has a fresh water spring on it, under the sea. The passage between it and Najweh is between 2 and 3 miles wide, with $3\frac{1}{2}$ to 6 fathoms. The Chaschús sand is nearly 8 miles from the shore, so that little is seen of the coast in working up.

From Ras Chawáchab the coast runs to N.W. towards Katíf, 10 miles below which place are a number of small rocky hills, visible about 9 miles, which are called Maráchibat Sadún, from their resembling a number of baghalahs hauled up.

* H. M. Schooner *Mahi*, I. N., lay here sheltered from all winds, and filled up with water by means of a pipe and hose which conveyed the water through the sea into the boat, the vessel lying within a quarter of a mile of the spring.

In working between Ras Kalí and the Najweh reef the pilots stand off shore till these rocky hills are out of sight, when they tack.

DEMMÁM is an important town and fort, the chief of which is much under the influence of the Wahebbí Amír. The principal fort, which is visible 10 miles, lies on an island on the shore reef, nearly joined to the main; it has a very tall tower in the centre of the fort, on which is the flagstaff. The rest of the town, and a smaller fort, stand on the main land near it.

The channels through the reef, by which the native vessels approach it, which are probably shallow, and only practicable at high water, have not been examined; the island and coast line behind it are only approximately delineated, there being a narrow channel only behind it, said to be dry at low water.

SÍHÁT, a town and large fort on the coast, about 5 miles S.S.E. of Katíf. Thick date groves commence here, and continue for 2 or 3 miles beyond Katíf. There is a high sand-hill behind this place, visible about 12 miles. Opposite to it is a channel, commencing in a bight of the reef northward of Ras Khalí, called Khor Síhát, which is the best channel for large boats proceeding to Katíf, one branch running up to the northward towards that place; the other branch turns to the southward, and is that by which boats approach Demmám. On the shore, half way between this place and Katíf, is a fort and town called 'Aních.

AL KATÍF* is an important town on the coast, S.W. by W. $\frac{3}{4}$ W., $9\frac{1}{2}$ miles from Ras Tanúreh. The chief is under the Wahebbí Amír, who has an agent or deputy there. The fort, the only part seen from the sea, is large, but appears to contain little besides the residence of the Sheikh and his followers, the town being scattered in the date groves surrounding the fort. There is a minaret 80 to 100 feet high in the south part of the fort, and the citadel in the north-west corner is said to have been built by the Portuguese. A high, brown sand-hill, 3 miles W.N.W. of the town, is visible about 12 miles, or from Ras Tanúreh. There is a good bazar here. There being plenty of fresh water in the neighbourhood, in springs, it is very fertile, and well grown with dates, and fruit trees of different kinds. Quantities of vegetables, melons, &c. are grown in the gardens round the town, and some rice is cultivated. The date groves extend a few miles to northward of the town, after which the coast is perfectly desert.

On the shore reef, opposite the town, lies the large and fertile island of Tárút, which is $3\frac{1}{2}$ miles in length and breadth; its eastern half is

* Sometimes called Al Khah, from a village which stood there before the present town.

closely grown with high date trees, near the centre of which is the fort of the same name, which has high towers showing above the trees, and is visible 10 to 11 miles. On its eastern shore, N.E. of this fort, is a large fishing village called Senábis, and at its south point is a square fort, and town called Dárín.

The town of Katíf can only be approached by small boats; the largest boats entering by the Síhát Khor. There is a smaller Khor, the entrance to which is about 3 miles east of Dárín; it runs to westward, about a quarter of a mile off that place, and joins the Síhát channel near Búrj Búllíf, a small fort or tower on the reef, $1\frac{3}{4}$ miles west of Dárín. The largest boats do not go farther in than this fort, but those not drawing more than 6 or 7 feet go up the Khor to Katíf. The main channel passes a quarter of a mile to eastward of that place; but there is a small branch, dry at low water, which admits such boats at high water, close up to the walls of the fort. There is a channel round the north end of Tárút island, only navigable at high water, which joins the Khor from Búrj Búllíf, opposite Katíf; a vessel anchoring off this Khor would have to do so from 4 to 5 miles east of Dárín.

RAS TANÚREEH is the south point of a long strip of sand, with sand-hills on its outer edge, which forms the north side of Katíf bay, and in some parts is only 100 yards wide; the south point is very low.

The name signifies whirlpool, and is given from the strong tides off the point. South of this point the flood sets to the southward; it also sets strong round inside the point to north-westward. The tides are very complicated; there appears to be a great meeting of them off this point, the flood setting to the northward, through the Khor Al Báb, and to the westward, along the north edge of the Yárem shoal. The set of the tides outside is not satisfactorily made out.

There is anchorage under this point, sheltered from all winds, with the point bearing S.E., and 1 to 2 cables off shore; but the bottom is hard, and plenty of cable wanted. Three miles north of the point, on the seaward side, the reef extends $1\frac{1}{4}$ miles off, but near its southern tip there is no reef. Vessels entering the anchorage must round this point quite close, about half a cable distant, and then luff up for the anchorage, making a short tack if necessary. The passage in, which has 4 and 5 fathoms, is only a quarter of a mile wide, there being a one fathom bank at that distance from the point, running N.W. and S.E.; the flood sets rather across on to it, so there is no danger of being too near Ras Tanúreh when rounding it. The channel runs on to N.W., passing, at 4 miles distance, close to southward of an islet, and has 5 fathoms in some parts, but is narrow and tortuous. The reef off Tárút island extends to within one mile of this point, and thence the edge runs in a south-south-west

direction to the entrance of Síhát creek. There is a clear passage of about 5 miles between Ras Tanúreh and Najweh reef.

FUSHT BÚ S'AFEH * is a dangerous shoal N.E. by N. $\frac{1}{4}$ N., $22\frac{3}{4}$ miles from Ras Tanúreh ; it is a patch of large lumps of rock, and the sea breaks heavily on it, there being only 3 feet over some of the rocks ; the whole shoal is under 2 miles in extent. It might be expected this reef would always show well, but this is not the case. The *Marie* sailed twice quite close past it, with a good look-out expressly for it without seeing it at all. The bottom is sandy round it, and 16 fathoms are quite close to. There is a detached 9 fathoms bank 2 miles to the eastward, and great overfalls between it and the coast, the depths varying from 7 and 9 to 20 fathoms. The shoal is frequented by fishermen from Tárút island, who take large quantities of fish with lines.

RENNIE SHOAL † is a small bank, $1\frac{1}{4}$ miles long by three-quarters broad ; bottom sand, with masses of rock. The least water, 17 feet, is only found in one spot. The soundings near the shoal are 30 fathoms one mile north and east of it, and 20 to 25 to the southward and westward, so that it forms a kind of outlier of the pearl bank. It is a danger for large vessels going between Bú-shehr and Bahreïn, being in the direct course between those places.

Washír is a large pearl bank 7 or 8 miles in extent, lying about 13 miles north of the Yárem shoal, with overfalls of 3 to 10 fathoms on it ; on its east side it nearly joins the Bú Amámah : there is a passage 8 miles wide between it and the Bú S'afeh, with depths of 20 fathoms.

Rug as Sarah is a pearl bank about 12 miles long east and west, with soundings of $2\frac{1}{4}$ to 10 fathoms, stony bottom. This bank lies north of the Yárem shoal, with a 7 fathoms channel, $3\frac{1}{2}$ to 4 miles wide, between them. It bears east from Ras Tanúreh ; the passage between being about 10 miles wide. There are also channels between this reef and Najweh shoal, and between it and Washír ; in which latter the Arabs say there are 25 fathoms, though only 10 are shown on Capt. Guy's chart. The best Arab pilots also stated there were not less than 3 or $3\frac{1}{2}$ fathoms on this shoal.

RAS TANÚREH to BANDAR MUSHÁB. General Description.—

The shore continues a low sandy or stony desert, with a few isolated hills at intervals : it is fronted for nearly the whole distance by extensive reefs, sometimes with passages inside them. Several low islets lie off

* The ship *Durable* of Bombay was wrecked on this shoal in the night, on her way from Bu-shehr to Bahreïn, on 21st August 1817.

† Discovered in the E. I. C. schooner *Constance*, Lieut. J. Rennie, I. N. 1848.

‡ Capts. Guy and Bruck's chart.

this coast. The sea is not generally so clear as farther to the south, owing to the white clayey bottom found in many parts, and the shoals do not show so well; many discoloured patches, of whitish muddy colour, are often seen, which look exactly like shoal patches; but on standing into them no change in the depth is found. This is apt to mislead the navigator, although the warning of discoloured water cannot safely be neglected. There are no fixed inhabitants or towns on the main, on this part of the coast, nor for 60 miles above Musháb, a coast line altogether 180 miles in extent. The country above Katíf, as far as Koweit, is called Burr al 'Adán; it is frequented by several Bedúin tribes, the principal of whom are the Beni 'Ajmán.* The average direction of the coast is N.W. $\frac{1}{2}$ N.; the great pearl bank decreases in width off it, and may be said to end about Bú 'Alí island, although pearls are fished for on a small scale on some banks north of that island. This part of the survey is very incomplete.

From Ras Tanúreh, Ras Abú 'Alí bears N.W. by N. 49 miles. The coast between them is desert and has several low hills in places, which serve as landmarks.

Ras al 'Alíyeh is a high sand-hill 16 miles to north-westward of Tanúreh; the shoal water extends 3 miles off this point, and 4 miles N.W. of it is a square black rocky hillock, a little inland, called Fanetís, which is rather remarkable. The coast is stony or sandy, with low shrubs.

Al Khaweir is a high sand-hill on a slightly projecting point, which forms the south end of the large shallow bay called Dúhet Bú 'Alí: inland of this point are some very high sand-hills, and on the coast a few miles north of it, is a small stony hill. Seven miles east of the point is a shoal patch in the fair way, nearly dry, called Dácheh?

Ras Abú 'Alí is the east, low, rocky point of the island of the same name, which is 12 miles long east and west, and forms the north side of the bay of Bú 'Alí. The island lies off a point of the main land, called Ras Barábakh, which is 8 miles W. by S. from Ras Bú 'Alí. The passage between the island and this point is narrow and shoal. There is a ruined tomb† a short distance from the cape, and a spit extends off it upwards of 2 miles to the eastward. The bay to the southward of this

* This tribe is said to be of Persian origin, as indeed, their name indicates; they muster about 3,000 fighting men, 700 of whom are horsemen, and occupy more particularly the part of the coast under description. Another large tribe, the Beni Hájir, occupy the country about 20 miles on each side of Katíf; they bear a bad character. The remnants of the once powerful tribe, Beni Khalid, which has been nearly destroyed in wars with the Wahebbí, have become incorporated with the Beni 'Ajmán, between Koweit and Ras al Ghár. Two other tribes in the neighbourhood of Katíf, are called Al Murrah and Makathubba.

† Of a Sheikh, from whom the island is named.

cape has good anchorage in a shemál. There is little reef on the north side of the bay, but on the west and south sides shoal water extends 3 miles off shore.

The Arabs say there are date trees in one or two places on the south-west side of this bay, with springs of fresh water.

The bottom is hard sand under 8 or 10 fathoms, and mud above that depth; the soundings are pretty regular, from 18 fathoms in the centre of the channel to 6 and 4 close to the reef, and 11 within half a mile of the spit off Ras Bú 'Alí.

Al Jenneh is a small sandy islet, about 10 feet above the sea, 9 miles E. by N. $\frac{3}{4}$ N. from Ras Bú 'Alí, and visible 7 or 8 miles. It is half mile long, and very narrow, and has a reef off it a quarter to three-quarters of a mile, which is steep-to, and extends farthest off on the north side. The anchorage off this islet is bad, being in deep water and uneven bottom.

Al Jereid is a similar islet, but somewhat higher, being visible 9 or 10 miles; it is little over a quarter of a mile in extent, and bears S.E. by E. $\frac{1}{4}$ E., $12\frac{1}{2}$ miles from Bú 'Alí. The reef is most extensive on the north side, where it is half a mile off. Twenty fathoms are only a quarter of a mile from the edge, so that here also the anchorage is bad. It is doubtful whether the channel between these islets is clear of danger, it has not been sounded; and between Jereid and the Bú S'afeh shoal the sea is full of shoal patches, with no safe channel between them, there being no marks, but there appears to be 20 to 30 fathoms between them in places. There is a navigable channel inside these shoals and islets, from Tanúreh up to Bú 'Alí, and on to north-westward; its width varies from 5 miles at the north end, to 10 and 15 towards the southern end. The soundings are from 8 and 10 to 20 fathoms, and somewhat irregular in parts.

RAS BIDDIAH is a point of low sand with tufts of grass, forming the north entrance point of Dúhet Músalamíah. It bears W.N.W. $19\frac{1}{2}$ miles from Ras Bú 'Alí. The entrance channel to the bay is close round the point, and only a quarter of a mile or less wide; the sand-bank on the south side of the channel continues a mile or more past the point to north-eastward, in a long spit, so that the boats entering the Khor run down from the northward, along the edge of the shore reef, which extends from a quarter to half a mile off shore. The bay is mostly shallow, but there is a deep Khor running up to the island of the same name,* which lies west, 4 or 5 miles from the point, and is about half a mile in extent.

* This island is also called Jezíret Amayir, from the name of the tribe; the remainder of the tribe, residing on the main land in the neighbourhood, are Bedúin, and noted as a warlike people, the total number is about 1,000 men. It is said they emigrated hither from 'Omman about 50 years ago.

Músalamíah is a village on the east side of this island, inhabited by fishermen of the Amayir tribe (about 400 men) ; the boats lie on the north side of the island. It is a large village, and built on the island for fear of the Bedúin. The bay or backwater runs in some distance at the back of the island. The main land on the north side of the bay is all low ; opposite the south side of the island it forms a slight bluff, and from thence to the southward for some miles is elevated 50 to 80 feet, and grown over with shrubs.

JINNEH island is about $2\frac{1}{2}$ miles south of Ras Biddíah, and three quarters of a mile off the mainland. It is level on top, of light colour, and has cliffs on the N.E. side, 35 feet high ; the west part of the island is low. The length east and west is about $1\frac{1}{2}$ miles, and there is a small fort and village on the north side, inhabited by about 200 men of the Amayir tribe, all fishermen. There is fresh water in wells. Both this place and Músalamíah are under the Sheikh of Katíf.

Just inside Ras Biddíah, a branch of the Khor runs to southward, between Jinneh and the mainland, with 3 or 4 fathoms in it ; a small branch of this admits boats, at high water, close up to the village.

There is a little basin with 3 fathoms, close to the north-east side of the island, in which the large boats lie ; but the entrance, which is from the eastward, is nearly dry at low water.

Dry sand-banks extend 2 miles to the northward and 1 mile to the eastward of the island ; and south of it is a large, shallow bay running about 15 miles to the southward, and ending in a swamp, the entrance to which, between this island and the west end of Bú 'Alí, is 7 miles wide. A vessel anchoring off this place could not get much nearer than 5 miles, there being a two fathoms flat to the eastward of the island ; she had best anchor with Jinneh fort S. by W. to S.W. by W., in 3 fathoms at low water.

From Biddíah point the coast runs to north and N.W. for 9 miles to Ras al Ghár all brown coloured, with rocky hillocks, overgrown with small shrubs. There is little shore reef from Al Ghár to Biddíah ; but from this point there are extensive reefs as far as Ras al Musháb, the foul ground extending about 5 miles north from Ras al Ghár.

Fusht al Kásh* is an extensive, detached reef, bearing from Ras Biddíah N.E. by E. $\frac{1}{2}$ E., distant 13 miles. The whole of the channel between it and the main has not been sounded ; but there is a clear passage on the shore side, 7 miles wide ; and the whole width of the channel may be clear. This is the entrance to the channel leading past Bú 'Alí to Katíf anchorage.

* So called from the noise of the sea washing over it.

DIRECTIONS for the channel from Ras al Ghár to Tanúreh.—It should only be attempted by daylight, the vessel anchoring at sunset. A departure should be taken, by sighting Hergúz, or Al Krán island, and a course shaped for the coast just below Ras al Ghár, which will be seen 7 or 8 miles. The soundings are not much guide in approaching it, there being overfalls from 5 to 10 fathoms. When the coast is well in sight, or about 4 miles off, steer to E.S.E. for Bú 'Alí, which will not be seen more than 5 or 6 miles. Pass about midway between the east point of the island and Al Jenneh,* so as to clear the spit off the east point of Bú 'Alí. After passing Jereid, keep over towards the coast near Ras Khaweir, till past the shoal patch about 5 miles east of that point, when stand along shore, keeping 2 to 3 miles off, till near Ras Tanúreh; you may then approach the coast to 1 mile or less. Attention is required off the high sand-hill called Ras Y'akíyeh, where the shoal water extends about 3 miles off. This point may be recognized by the hill called Fanetís, a short distance to the northward.

If working through, too long tacks must not be made off shore, so as to be entangled among the reefs; perhaps, as a rule, it would not be advisable to stand on long after the shore is down.

Off this coast, to the north-eastward of Ras al Ghár, lie 5 islets, all very low, and with deep water close to them. It is not recommended to make any of this group by night, if it can be avoided; they would also be difficult to make in the haze caused by a shemál, especially in the summer. The flood sets through this group of islands to westward. There is no fresh water on any of them. The anchorage is bad at all these islands, being in deep water, except at al Krán.

JEZÍRET FARŚÍ† (*i.e.* the Persian) is a small islet, nowhere more than a quarter of a mile across, and but a few feet above the sea level. It is grown with coarse grass and brushwood, and has a beacon, of loose stones piled up in a pyramidal form, about 12 feet high on its northern end; this is visible 7 to 8 miles, and looks like a boat's sail. The sandy beach of the island is quite white. The reef round it extends nowhere more than a quarter of a mile off, and shows plainly; it is steep-to, 25 fathoms being less than a quarter of a mile off shore, on the south side. Outside this island, and 'Arabí, there are 30 fathoms within a mile. There are flocks of small birds on Farsí at certain seasons, and their noise may be heard on a quiet night, when about a mile from the island, and long before it could

* Not to be confounded with Jinneh.

† The ship *Nadree*, was wrecked on this island, in 1822, by running on it at night. (Horsburgh's Directory). An English ship was lost on it in 1763. (Col. J. Capper's Journey, 1783.)

bè seen. It is frequented by fishermen, chiefly from Kháreg, who catch turtle, which abound on this island, for their oil, and some sorts for the shell. The island is 57 miles distant from the nearest part of the Persian coast, and 53 from the Arab coast, just south of Ras al Ghár.

JEZÍRET ARABÍ (i.e. the Arabian) is a small sand-bank, with rocky foundation, lower even than Farsí ; its greatest dimension is about 600 yards, and there is no grass on it. There is a small pile of stones in the centre, but too small to be of service as a beacon. It is not visible more than 5 or 6 miles. The reef on which it lies, does not extend more than a quarter of a mile off in any direction. It bears S. $\frac{1}{4}$ W., 13 miles from Farsí.

The island literally swarms with birds (shag ?), and is covered with their nests and young ones ; so that you can hardly walk without treading on the eggs. It has a deposit of guano, a few inches thick, all over it. Like Farsí, it is visited by fishermen to catch turtle.

JEZÍRET AL KRÁN is nearly a mile in length, N.E. and S.W. ; a few feet above the sea, and covered with brushwood.* There are few birds on this island, compared with the two last. The reef extends off it nearly half a mile on the south, and perhaps, a mile on the north side ; the soundings on the south side are less bold than at Farsí ; 10 fathoms being about half a mile off the reef. The anchorage is on the S.E. side, in 8 fathoms, sand, half a mile off the island. This island is frequented by fishermen from Músalamíah, who dry fish, make turtle oil, &c., which they dispose of at Koweit or Basrah. It lies S.W. $\frac{1}{2}$ W. 24 miles from Farsí islet, and 30 miles from the coast.

JEZÍRET AL KREÏN is a small sandy islet hardly above high water level, 4 miles S. $\frac{1}{2}$ W. from the centre of Al Krán. It is covered with birds, and lies on a small reef. There is a clear channel, with 14 fathoms water, between this and al Krán. Capt. Brucks states there is a 5 fathoms bank, about East, 8 miles, from this islet, but its exact position was not fixed. The *Euphrates* sailed over the assigned position without finding it. There is a channel 13 miles wide, between this islet and Fusht al Kásh, and one of 17 miles between it and Jereïd, which both appear to be clear, but they have not been examined sufficiently to assert it positively. A good look out would be necessary, if passing through them.

JEZÍRET HERGÚZ is hardly above the level of high water, a mere sandbank, about 200 yards in length, and not visible more than 5 miles. The reef surrounding it is small, and deep-to, 15 fathoms being close to the

* A native boat, hauled up on the island, was the first thing sighted, and supposed to be a rock in the sea, so low and level is the islet.

edge. There are few birds at this islet, which lies W. $\frac{1}{2}$ S., 26 miles from Farsí. There is no danger between this and the other islets, the soundings being from 20 to 30 fathoms, muddy bottom; there is also a clear passage of 20 miles, with 25 fathoms, between it and the Bildáni reefs.

RAS AT TENÁJÍB, N.W. $\frac{1}{4}$ N., $23\frac{1}{2}$ miles from Ras al Ghár, is a point of land, with a flat, light coloured hill on it, visible 8 or 9 miles, and 60 to 80 feet high; the highest part at the north end. The coast between this place and Ras al Ghár forms a slight bay, which is shallow, banks extending 5 to 9 miles off the shore. The coast is mostly low, between these points; a little hill, about 14 miles to southward of Tenájíb, is called Jebel Meneifeh. Near this hill is a small bay and anchorage for boats called Dúhet Balbúl.* The 20 fathoms line is from 20 to 25 miles off this point of the coast, between which depth and 8 fathoms, the bottom is generally white clay. The coast may be approached to 10 fathoms until near the Bildáni reefs, which are steep-to. Off this point commences the great chain of shoals, extending all the way to Musháb, and lying from 14 to 17 miles off shore.

RAS BILDÁNÍ, the south-east tip of these reefs, is 17 miles N.E. by E. $\frac{1}{2}$ E. from Ras Tenájíb. Some parts of these banks are dry at low water, and there are 10 fathoms at about half a mile outside them. Eighteen fathoms by night, or 15 by day, are safe distances to approach their edge, which is everywhere out of sight of land. There is a boat channel along shore inside these shoals; it has not been examined, and some Arabs told us there was enough water for a ship. A vessel might anchor under the lee of Ras Bildáni, sheltered from the shemál, with Tenájíb hill, W. by S., distant 7 or 8 miles. This anchorage would be quite open to the south-easter.

RAS AL MUSHÁB is a low point of land, sandy, with patches of low cliff, opposite the north end of the Bildáni shoals. There is a large bay to the south of it, mostly shoal, in which native craft anchor sheltered from the shemál. It is recognizable by the landmark called Jebel 'Amúdí, a dark volcanic looking hill, 105 feet in height, which makes in 4 or 5 hummocks, and lies $2\frac{1}{4}$ miles S.W. by W. of the point; it is visible 11 to 12 miles. Close to south-eastward of Ras Musháb, lies Jezíret al Muk't'ah, about 2 miles in length, N.E. and S.W.; which has cliffs, 20 to 30 feet high, on its eastern side, and is covered with grass and brushwood. There is no channel inside it.

* A kind of fair is held in this place, from April to June, when the Bedúin barter their ghee (preserved rancid butter much esteemed in the east) for dates, and rice, and other necessities which are brought by boat from Koweit, &c.; many of the Bedúin coming from considerable distances.

The shore reef extends 4 miles to N.N.E. of this island, with 2 and $2\frac{1}{2}$ fathoms, and has a nearly dry patch near its outer edge, $3\frac{1}{2}$ miles N.N.E. $\frac{1}{2}$ E. from the island, called Kat'at Umm as Sahál; 9 fathoms are close to the edge of this shoal. A sandy spit projects $2\frac{1}{2}$ miles east of the island, with several dry sand-banks on it; to the southward of which is the anchorage called Bandar Musháb, the entrance to which is about 3 miles wide, with depths of 6 and 7 fathoms, between the spit off Muk't'ah, and a detached patch of reef (called Gassár al Mítmeh). The best berth would be with Muk't'ah island about N.W., distant $1\frac{1}{2}$ to 2 miles. This is the entrance to the boat channel (before mentioned) leading to Tenájib.

From Gassár al Mítmeh the edge of the shoal water, which appears to be continuous, runs about 9 miles to E.N.E., and then turns to E.S.E. towards Ras Bildání. The northern extreme of these shoals bears E. by N., about 13 miles, from Jezíret Muk't'ah.

Nine miles S. by E. of Muk't'ah is a small hill on the coast called Jebel Thalúf. It forms in two little lumps, with a bluff to the north, and is about 40 feet high. The intermediate shore is low; 4 or 5 miles to S.E. of this hill is a projecting low point called Ras Safaniyeh, between which and Tenájib the coast is low, with one or two small hills, and forms a deep bight, but is little known.

Eighteen miles N.E. of Muk't'ah is a pearl bank, with 8 fathoms on it, called al Gumrah, with 12 fathoms between it and that island.

RAS AL MUSHÁB to BÚBÍYÁN ISLAND. General Observations.

—The tides are strongly felt off the coast, setting to N.N.W. and S.S.E.

This part of the coast is not sheltered from the shemál, which blows at N.N.W., or even North, with considerable sea from North or N.N.E. There is no place of shelter on the coast, except for very small boats, between Koweit and Musháb.

The coast is safe to approach to 4 miles, till north of Kat'at 'Arífán, when 1 mile is a safe distance. The soundings are little guide, there being overfalls inside the islets lying off it. The bottom, under 8 fathoms, is sand or rock, but outside 9 fathoms all mud. Between Musháb and Sh'aibeh the principal tribe is the Beni Howájir, about 1,500 men, of whom 200 are horsemen.

RAS AL KHAFJÍ is a sandy point, N.N.W., 14 miles from Muk't'ah island, on the north side of which is a small Khor. The shore reef extends a mile off the point. The coast between this and Muk't'ah, which is of low sandhills, forms a slight bay, called Dúhet al 'Aslí, which is shoal, 3 fathoms, being 2 to 3 miles off shore.

RAS BURD HALJ is a low, white, sandy point, about 5 miles N.N.W. of the last, and has a spit extending a mile off to north-eastward. Nine

fathoms are about 2 miles, and 15 fathoms, 10 miles off this part of the coast. The coast falls back, forming a bay on each side of this point, that on the north side being the deepest; and there is a small sandy spit in it about 4 miles N.W. of the point, called Hed al Hamáreh, behind which boats find shelter.

RAS AZ ZUWAR is a long, low, sandy point, the tip of which bears about N. by W. $\frac{1}{2}$ W., 15 miles, from Burd Halj; it has a spit extending 2 miles off it. The bay between it and the last point appears clear of danger; 15 fathoms are 8 miles off this point; bottom, white mud and sand. Seven miles S. by W. of it, is a small dark coloured saddle hill, about 2 miles from the shore, which is of low white sand-hills; it is called Jebel Beníyeh (about 80 feet), and is visible 8 or 9 miles. Two miles to the north of this hill is the entrance to a small creek of the same name, frequented by fishing boats.

Ras Jill'ah is a low point 10 miles N.W. by N. from Ras Zuwar; the shore between forms a deep bay, which has many shoal patches, to a distance of four miles from the shore, rendering it unsafe to enter: it is called Dúhet az Zerg. A spit extends 2 to 3 miles off Jill'ah point, with 9 fathoms close to it. About 3 miles N.W. of the low point is a small square-shaped hill, visible 8 or 9 miles, supposed to resemble a fort, from which the name is given to the point.

Kat'at 'Arifán is a small detached reef 7 miles N. by W. from Ras Jill'ah, and about 4 from the shore. It is nearly dry, and has 7 fathoms close to all round. Excepting this shoal, the coast is clear of danger from Jill'ah point to the entrance of Koweit harbour.

RAS AL ARTH, the south entrance point of Koweit bay, is a low sandy point 31 miles N. by W. $\frac{1}{2}$ W. from Ras Jill'ah. The intermediate coast is low, but the land, which is a stony desert of brown colour, rises gradually from the coast to a height of 200 to 300 feet, at a few miles inland, and is visible about 18 miles off the coast. There are several small forts on the coast below this point, which are all under the Chief of Koweit. There is no shore reef between this point and Ras Jill'ah beyond a cable's length or so; 10 fathoms are within a mile of the beach for 20 miles below this point, while off it 14 fathoms are within half a mile: a very heavy sea runs on it in a shurgí. Five miles S.W. of this point is a small square fort, on the higher ground (180 feet), which is a good landmark when making Koweit.

The coast runs nearly straight S. $\frac{1}{2}$ E. for 25 miles from Ras al Arth, and 10 miles below it is a small fort on the coast called Fanetís, with about 40 men; 3 miles below which is another called Abú Heléifeh, with a few date trees near it and wells of good water. Some horses are

shipped from this place in Koweit boats for India. Half way between these two places is a small date clump called Al Fantás.

SH'AÏBEH.—A small square fort on the shore $5\frac{1}{2}$ miles south of Bú Heleifeh, inhabited by about 40 families of the 'Ajmán tribe. The beach is sandy, but rocky underneath ; landing at low water indifferent ; there is a young date plantation here, and some water in wells : the people are herdsmen and cultivators at this and the other two places just mentioned.

JEZÍRET KÚBBR is a low, white, sandy islet, overgrown with brushwood, 26 miles S.E. $\frac{1}{2}$ E. from Ras al Arth, and 17 from the nearest point of the main ; it is not more than quarter of a mile across, and is highest on the west side, where some sandy hillocks are about 8 feet above the sea ; it is visible 6 to 7 miles, and is surrounded by a little reef. On its W. and N.W. sides are detached one fathom patches, half to three-quarters of a mile off shore, and steep-to ; 15 to 19 fathoms are about a mile off, and on the north and east sides the water deepens when approaching it. There are few birds here, but *chakúr* * frequent the island, coming over from the main. There is no water, except possibly after rain. It affords little shelter in a *shemál*, and the tide swinging a vessel broadside on to the sea renders it an inconvenient anchorage. The best berth is with the island N.N.W. in 11 fathoms, about half a mile off shore.

The soundings between the island and the main are 17 fathoms, and to the east of it 14 and 15 fathoms for a distance of 25 miles. Three miles to the north-eastward lies an extensive mud flat, with 6 and 7 fathoms, about 15 miles in extent, called Bú Jezzeh. It has not been surveyed, but as pearls are fished for on it, some parts are probably hard bottom.

JEZÍRET GÁRÚ is a sandy islet, and very low, only 3 or 4 feet above high water, with a very few tufts of grass, and not much more than a cable's length across ; it swarms with birds (*shag* ?) and is covered with their eggs and young ; there is a deposit of a few inches of guano over its surface. It has a spit half a mile off the north side, and deep water near it, 15 fathoms being a quarter of a mile off, so that the soundings are not much guide approaching it. By night a vessel should not come under 20 fathoms from seaward. Gárú bears S.E., 21 miles from Kúbb, the sounding between the islands being slightly irregular, 15 to 19 fathoms, and between Gárú and the coast 17 to 10 fathoms. There are 20 fathoms 1 to 2 miles to S.W. of it. The anchorage at this island is worse than at Kúbb.

DANGER.—One mile and a quarter N.N.W. of this islet is a detached small patch, quite steep-to, on which the sea breaks at low water.

* Birds of the partridge description.

UMM AL MARÁDIM is a low sandy islet, covered with brushwood; greatest dimension under half a mile, and visible 6 miles. A small reef extends off it from a quarter to half a mile, except at the south point. The soundings near it are 14 to 16 fathoms at half a mile off. Anchor with the island North, quarter of a mile distant. It bears from Kúbbr S. by E. $\frac{3}{4}$ E., 25 miles, and lies 13 miles from the main land. The soundings between this island and Kúbbr are 14 to 19 fathoms, and between it and the main the deepest water is 16 fathoms, which is near the island. On the east side the depths are 14 fathoms for 6 miles from it. There is no water on this island or on Gárú.

DANGER.—Two miles and one-eighth N.N.W. from this islet is a small reef, steep-to, one rock on which is dry at half-tide.

AL KOWEÏT* is one of the most important towns on the Gulf: it contains about 25,000 inhabitants, of the Uttúbí tribe (al Subah branch). It is situated on the south side of a fine clear bay 20 miles long, east and west, by 10 broad, with water of a suitable depth for anchorage all over (10 fathoms and under), and good holding ground. In a shemál a considerable sea gets up in the bay, but not enough to distress a large vessel. The south-east entrance point of the bay is Ras al Arth, already described. The soundings in the bay, are, off Ras al Arth, somewhat irregular, 14 to 16 fathoms; off Ras 'Ajúzeh, 6 to 10 fathoms; thence shoaling to 6 and 7 at the entrance of Dúhet Káthemeh.

The town commences a mile W.S.W. of Ras 'Ajúzeh and extends a mile along the shore; it is surrounded by a low wall with towers, in a ruinous state, and there is a large suburb of mat huts outside the walls. It is a nice looking place, the houses being mostly of stone and sun-dried bricks. There is a detached tower near the wells about a mile to southward of the town. Shoal water extends about half a mile off the town, and the beach dries off a considerable distance, but at high water the sea washes up to the houses; the native boats are hauled up on the beach, opposite the town, and are protected from the sea by substantial breakwaters of loose stone, within which they lie aground.

The whole country round being quite desert, all white sand, the place is entirely dependent on its trade for support; it possesses more bag-halabs than any port in the Gulf, which trade to India, but it only sends about 40 boats to the pearl fishery; the Koweit boats only

* The authors have not been able to ascertain why this important town should have been called Grane, by former Geographers, and still be so called on our maps. The name is unknown to the inhabitants, or to any Arabs in the Gulf. The only approach to it, is Korein, the name of an insignificant islet in the harbour. Captain Brucks says quaintly in his Memoir; "Grane," "called by the natives al Quaat, is in latitude," &c., &c. In that case, why give it the name of Grane at all?

fishing as far south as Bú 'Alí. They have 130 vessels from 20 to 300 tons. Being a warlike, united tribe they are much respected, if not feared, by other tribes, and none venture to attack them. They acknowledge a nominal subjection to Turkey, and fly the Turkish flag, but pay no tribute ; the chief on the contrary receiving an annual present from the Pasha of Basrah. Their vessels bring dates from Basrah, which they take to India, &c. ; and many of the horses sent to India are shipped from this port. From India they bring timber, rice, &c. ; they also do much of the carrying trade for other ports in the Gulf. Koweit is much visited by the Bedúin, who bring horses, cattle, &c., which they barter for dates, clothes, arms, &c. ; there are generally one or two Bedúin camps near the town. Sheikh Jaubir, the late chief of this place, died in 1859, at the age of 107 or 108. The first establishment of the tribe here took place about A.D. 1716. The border of that part of Arabia called Al Hasa is two days' journey from this place. Cattle may be procured, also poultry, and some vegetables ; firewood dear and scarce, water indifferent.

TIDES.—It is high water, full and change, at Al Koweit, 12.30 ; rise and fall at springs 9 feet.

Ras 'Ajúzeh (i. e. Old Woman's cape) is a low point 6 miles N.W. by W. $\frac{1}{2}$ W. from Ras al Arth, the coast between the points forming a bay with shallow water, so that vessels should not stand within the straight line between these points. A rocky flat, dry at low water, with fish weirs on it, extends a third of a mile off this point : $1\frac{1}{2}$ miles to S.S.E. of it native boats anchor in shelter during a shemál. There are three small forts near the shore, between this and Ras al Arth, and nearer to the latter point. From this the coast runs 9 miles S.W. by W., to the bottom of a shallow bay called Dúhet abú Taleh. Half a mile west of the point are two little trees, the only vegetation seen.

Fusht al Hedebeh is a rocky 2 fathom shoal, $1\frac{3}{4}$ miles north of the east end of the town. The passage to the anchorage, with 3 to 5 fathoms in it, is between this and the town reef. The anchorage for large vessels off the town is called Bandar Toweineh ; it is in $3\frac{1}{2}$ to 4 fathoms, with the town E.S.E., $1\frac{1}{4}$ to $1\frac{1}{2}$ miles. By standing well in, close to the large native vessels, a ship would be sheltered from the shemál by Al 'Akkáz reef, the point of which bears N.W. about $2\frac{1}{2}$ miles from the west end of the town.

A short distance to south-westward of the town are some white sand-hills, called as Saleibikhát ; beyond which the shore continues low to the bottom of Dúhet Abú Taleh.

Jezíret Koreín is a barren islet, with a brown coloured little peak, 30 or 40 feet high, $5\frac{1}{2}$ miles W.S.W. of Ras 'Ajúzeh, and three-quarters

of a mile from the shore; just to south-east of it is a small basin, with 2 fathoms water, where the smaller native boats lie. The entrance to it is from Bandar Toweineh, inside al 'Akkáz reef, and not round to the westward of it, as shown on Captain Guy's chart. This anchorage, which is called Bandar Shuweikh, is quite sheltered from all winds.

Ras 'Asheirij, a low point, lying West, $8\frac{1}{2}$ miles from Ras 'Ajúzeh; from this, the shore runs south, 4 miles, to the bottom of Dúhet Bú Taleh: close to eastward of this point lies a small low rocky island called Jezíret Umm an Niml (*i.e.* the Ant's island). The bay between this and Korein islet is shoal, and a reef extends from 4 to 5 miles off this point, and Umm an Niml, to the eastward, until opposite the town of Koweit; the eastern point of this reef is called Al 'Akkáz (*i.e.* the walking stick); the part of it off Umm an Niml is called Al Bakhsh, which name, on Capt. Guy's chart, is applied to 'Asheirij point. We were assured there was no passage between Umm an Niml and Al 'Akkáz into Bandar Shuweikh (as shown on Capt. Guy's chart); all the native craft we saw enter that anchorage, passed to the southward of Al 'Akkáz.

DÚHET KÁTHEMEH is the name given to the part of Koweit bay west of Ras 'Asheirij: the south side of it has a W.S.W. direction, for 5 miles, from that point; it is free of danger, and shoals gradually from 7 fathoms at the entrance, which is 4 miles broad, towards the head. It is also called Dúhet Jahreh, from a place a short distance inland from the head of it, where there is a little cultivation.*

The north shore of Koweit bay is called Al Aghthey; it is several hundred feet high, and level on the top, and of dusky brown colour; apparently stony hills, ending towards the sea in a steep declivity. It curves gradually round from the bottom of Dúhet Káthemeh to the entrance of Khor Subbeyeh (*i.e.* the creek of the little girl). A mud flat extends some distance off, increasing in width to the eastward, and off the eastern part, as much as 4 or 5 miles in breadth, with soundings on it under 2 fathoms.

JEZÍRET FEÏLECHEH is an island of triangular shape, 7 miles long N.W. and S.E., by 3 miles broad at its western end; it is all very low, except a small mound at its south-west corner, and not visible more than 6 to 8 miles. It lies on the extensive flat of mud and sand, with rocky patches, and 1 to 2 fathoms over it, extending to south-eastward of the entrance of Khor Subbeyeh.

The highest part of the island is the small mound on its south-west side, which has a tomb on it, called S'ad-o-S'ayed, about 30 feet above the sea.

* Jahreh is near the ruins of an ancient town called Tíneh, which are said to be very extensive, but have not been visited by Europeans.

About the centre of the west side is the village of Az Zoar, with a small date grove, and about 250 inhabitants. There were several other villages on this island, now abandoned, viz., As S'eideh, on the north-west point, Kereiniyeh, with a date grove, on the north-east side, and Sebáhiyeh, with a date grove, near the south-east point. Native boats anchoring on the flat, off the little tomb, shift round the point on which it stands, according to the wind. The natives own many boats; the island is unhealthy; water indifferent.

The flat off the island extends about a mile off on the north-east side; off the south-east end it is rocky and extends 3 to 4 miles off shore, being nearly dry at the extreme tip, which is steep-to, having 7 fathoms close to it; caution is therefore required in passing it: the low south-east point of the island would not be seen till near its edge. Two miles west of this point of the reef is a small sandy islet on the reef called 'Aoheh.

On the south-west side of Feilechch the flat extends 2 to 3 miles off, but is not so dangerous; and, south of the island, the 3 fathoms line is 6 to 7 miles off, so that the island is not often sighted when entering the harbour unless working in. The great mud flat lying between it and the main is called Thárúb; on it, 2 miles to north-westward of Feilechch, lies a low sandy islet called Mischán.

DIRECTIONS for making and entering Koweit. By day Kúbbr island may be sighted; but by night it would be advisable not to deepen the water to more than 10 fathoms, on the south side of the flat called Bú Jezzeh, in order to avoid that island. The principal danger outside the harbour is the spit extending to south-east of Feilechch island. When opposite Kúbbr, the main land would be sighted. The land below Ras al Arth may be approached to half a mile or even less. The hill fort below that point bearing West will clear the 3 fathoms flat south of Feilechch, which island would probably not be sighted.

Ras al Arth, which is very low, is steep to, and may be rounded quite close. If working in, the lead will be a guide to tack on the Feilechch flat, after passing 'Aoheh, except just opposite this point, where 10 fathoms are very close to the shoal water. After passing that part, the lead is again a good guide on the north side of the bay. After passing Ras al Arth, do not stand into the bay between it and Ras 'Ajúzeh, which latter may be passed half a mile off; the rocks off it are dry at low water, and at half tide, the fish weirs on it serve as a mark. Stand between the shore reef and Fusht al Hedebeh, which latter, by day, will be seen, or by attention to the lead, may be avoided, as the water shoals regularly, but quickly, on to its edge. It is, perhaps, preferable to feel the way along the edge of the shore reef, hauling out, if a shoal cast is obtained. Anchor in $3\frac{1}{2}$ to 4 fathoms, with the town about E.S.E.

Vessels anchoring outside the Hedebeh shoal, or with the town S. by W. to S.S.W. would not be much sheltered in a shurgí. There is generally a light land wind in the morning in fine weather, and in the afternoon fine sea breezes from S.E. to east, which are felt some distance down this coast, and as far out as the group of islets off it.

JEZÍRET BÚBÍYÁN is a large low island, 26 miles in length north and south, by 12 in breadth; it is quite barren, and partly overflowed at high water, and the soil impregnated with salt. Its south point, called Ras al Abresheh, is 7 miles N.N.W. from Feilecheh island. Its western side is nearly connected with the main its whole length, being only separated from it by Khor Subbeyeh, which is about half a mile in width, and has 2 to 5 fathoms in it; but its mouth, which is on the Thárúb flat, is shallow, and has several nearly dry patches off it (Capt. Brucks).

At the north end of Búbíyán lies the island of Wúrbah, separated from Búbíyán by Khor Subbeyeh, and from the main by a channel, which has a creek leading out of it northward, navigated by small native boats for some distance to a place called Duweireh, or Khuweireh, the port of Zobeir, which is a large town, 10 or 12 miles to south-westward of Basrah, standing on a swampy desert plain.*

Khor 'Abdallah is a great inlet, having Búbíyán island on the west and the banks on the west side of the Shat al 'Arab on the east. It is 12 miles wide at its entrance, and runs to north-westward to Wúrbah island, joining Khor Subbeyeh. The soundings in it are 4 to 5 fathoms. It is never visited by European ships. The entrance to it has not been sounded across. Off the easternmost point of Búbíyán, and at the entrance of Khor 'Abdallah, lies a detached bank of hard sand, called Aeich al Holeibeh, dry at low water in places, about 8 miles in length, and running nearly parallel with Búbíyán island, with a 3 fathoms channel between them. The southern tip of this reef is 6 miles off the island; the soundings are 3 and 4 fathoms close to it.

The sand flat connecting Feilecheh and the main continues on the south-east side of Búbíyán to a distance of 2 to 3 miles off, and 3 fathoms are 6 miles off the low and swampy shore of this island.

* This channel has not been explored, and the information here given is from various authorities; it is supposed to have been an ancient canal.

CHAPTER IX.

NORTH, OR PERSIAN, COAST OF PERSIAN GULF, AND GULF OF
'OMMAN.—RAS JASHK TO RAS BOSTÁNEH.VARIATION, Westerly $0^{\circ} 20'$ to $0^{\circ} 50'$, 1864.

GENERAL OBSERVATIONS.—This coast has ranges of mountains of great height extending its whole length, at a short distance from the sea, forming good landmarks. There are numerous villages and towns along it, with a mixed Persian and Arab population; the fishermen, or seafaring portion, being Arab, and the cultivators, &c., chiefly Persian. Most of the towns have date groves, and a small amount of cultivation near them, but other trees are few and small, except at a few places, where a banyan tree is met with. The coast from Khamír to the south-eastward, with the islands at-Tawilah, Hormuz, and Lárek, are held by the Sultan of Maskat, who pays a tribute to the Persian government for the part north and west of Mínáb, and has garrisons at the principal places. West of Khamír, it is more directly under the Persian government.

The **COAST** from Jáshk to Grú is very low, there being a plain of varying width between the mountains and the sea. It is throughout deep-to, and the soundings are little guide. Supplies are not easily obtainable at any of the villages, which all lie a short distance inland. Except at Jáshk, there is no shelter on this part of the coast in a Shemál, and the anchorage is bad, being close to the shore, owing to the depth of the water. The low coast being only visible a short distance, a stranger, seeing only the hills, is apt to be misled as to his distance off shore. The survey of the coast made by Captain Brucks, East of Jáshk, and to the north-westward as far as Hormuz, was no more than a hasty reconnaissance, with only a few soundings, apparently a single line, carried along close to the shore.

RAS JÁSHK is a low projecting cape, sandy, with patches of rock, with an old tomb,* on a low cliff at the south point, 25 feet high; and two banyan trees $3\frac{1}{2}$ miles N.E. $\frac{1}{2}$ E. from the tomb. The point is covered with coarse grass, and is visible seven miles.

* Of a Musulman saint, called Sheikh S'ayed; it is of some antiquity, for the master of the ship *Roebuck*, of London, states, that on the 15th December 1620, they saw Cape Jasques (sic) "having upon it a tomb or old square flat-roofed house." Purchas his Pilgrimes, l., 723.

There are several ranges of mountains one behind the other, and the lower range approaches within 5 miles of the coast; the most remarkable of them is an isolated, quoin-shaped mountain, 1,630 feet high, the bluff or highest part to the west, called generally Jášhk Quoin hill, lying N. by W. $\frac{1}{4}$ W. $12\frac{1}{4}$ miles from the cape: * with this bearing it is a good mark for making the place. It cannot be mistaken. always shows well against the hills behind, and is visible 40 miles. Twelve miles N.E. $\frac{3}{4}$ E. from the cape is a light coloured bluff, 1,720 feet, forming the eastern extreme of the hills, which fall back beyond it, and recede from the shore. From this bluff the range runs to westward, behind the Quoin hill, and higher mountains are seen over it.

Jebel Shahū,† estimated elevation 5,000 to 6,000 feet, is about 44 miles N.E. $\frac{1}{2}$ E. from Ras Jášhk; from the south-westward it makes with a great bluff on the east side, and is visible 70 to 80 miles. Jebel Dunghír, 3,130 feet, is a conspicuous mountain, whose summit is 7 miles N.W. by N. from the Quoin hill, and quite separated from it; having a long slope down to the southward, and a very serrated outline. On the southern slope is a remarkable natural pillar of rock, $3\frac{2}{3}$ miles N.W. by W. from the Quoin hill. To the westward of this hill there is a great valley between it and the hills north of Ras al Kúh.

The coast eastward of Ras Jášhk runs to N.E. by E. 9 miles from the point, forming a deep bay, the eastern point of which is Ras Zegín, or Jagín; a low point, 16 miles E. by S. $\frac{1}{2}$ S. from the former cape, and quite clear of danger. There is deep water close to it, 20 to 30 fathoms being within 2 miles, and the bay has also deep water, except towards the head. On the west side of Zegín is a small creek called Khor Lash.

Anchorage.—A vessel may anchor in shelter in a shemál, on the east side of Jášhk point, in 6 fathoms, a quarter of a mile off shore, with the tomb W. by S. distant 2 miles, opposite the south end of a long line of low cliff. In winter, she would have to shift round to the west side, if an easterly gale came on.

Jášhk bay is on the west side of Ras Jášhk. From the tomb on the point, the coast has a N.N.E. direction for 4 miles to the entrance of a small creek, the bar of which is nearly dry at low water. This creek runs to S.E. 2 miles, towards the two trees before mentioned, and then turns to northward; the land near being all swampy, with mangroves: from this creek the shore bends round to N.W. and W. The bay is called Bandar Mukhsu by the Arabs.

* When the highest part of Jášhk Quoin is in transit with the tomb on Ras Jášhk, it bears N. $13^{\circ} 48'$ W. true.

† The position of this hill is taken from the chart of the Mekrán coast by Brucks and Haines, 1829.

The soundings off the point are 50 fathoms at about $1\frac{1}{2}$ miles, and 6 fathoms at one-third of a mile off. Close to west of the tomb is a small spit with 1 to 3 fathoms, extending half a mile off. There is no reef on the east side of the point. The soundings in the bay are 5 fathoms at 2 to 3 miles off shore, and 3 fathoms $1\frac{1}{4}$ miles off. The anchorage, if merely anchoring in an easterly breeze, would be about a mile to N.N.W. of the tomb; but if intending to remain, or communicate with the town, about 4 miles N. by W. from the point. A vessel lying in this bay, if a shemál came on, would have to shift round the point to the anchorage described on the east side.

MASON SHOAL.—A flat of 6 fathoms extends about 4 miles west of the cape, after which the water deepens rapidly. At the edge of this flat, and $3\frac{1}{4}$ miles W. by S. $\frac{1}{4}$ S. from Jáshk tomb, is a small bank, called Mason shoal* about a mile in extent with only 3 fathoms on it, bottom rock, coral, and sand, steep-to, the soundings deepening rapidly to 50 fathoms at $1\frac{1}{2}$ miles from its south side.

Jáshk Fort † is $6\frac{1}{4}$ miles N. $\frac{1}{4}$ E. from the point; it is small, and has a few date trees near, and south of it, and a range of white sand-hills to south-eastward. It lies one mile from the coast, and is not plainly seen from seaward. There are about 200 men here, all cultivators; and they have no boats. A few fishermen, who live on the point, take fish in nets. There is a small Maskat garrison here, and wool, cattle, wheat, and ghee is exported in boats that come from Maskat, &c.

From Jáshk tomb, Ras al Kúh bears W. by N. $\frac{3}{4}$ N. $26\frac{1}{2}$ miles: the intermediate coast runs nearly straight from the head of Jáshk bay, forming a slight point, on which is a little light coloured hill, 15 miles east of Ras al Kúh: there is a small spit off this point. The rest of the coast is low, and there are no villages in sight from the sea.

Soundings.—These are very bold, the 100 fathom line being only 7 miles, and the 20 fathom line one mile, off Ras al Kúh; and farther to the eastward the 20 fathom line is only 4 to 6 miles off shore.

DANGER.—8 miles to south-eastward of Ras al Kúh, and 2 to $2\frac{1}{2}$ off shore, lies a small $1\frac{1}{2}$ fathom patch, with 7 fathoms inside, and 10 close-to outside it. Kúh i Mubárah hill bears from it N.W. about $10\frac{1}{2}$ miles distant.‡

* From Lieut. Mason, I.N., who discovered it in 1857.

† When the Portuguese held Hormuz, Jáshk was the resort of the English ships trading to Persia.

‡ The existence of this shoal was denied by Lieut. Grieve, who was sent to search for another shoal near it, in 1849, but there is no reason to doubt that it exists in the assigned position, and it has been inserted on the revised chart. It has generally been called Kúh-i-Mubárah shoal; the name given to it by the Arabs is not known.

RAS AL KÚH is a very low point, at which the coast suddenly changes its direction to N.N.W. ; the shore is a low strip of sand with tufts of grass, and inside this all is swampy for 2 or 3 miles : a small creek has its mouth close to northward of the point, having dry sands a quarter of a mile off it. The point is very deep-to ; a vessel might anchor about a mile to eastward of the point, half a mile off shore, in 6 to 10 fathoms ; but little sheltered against a shemál. The date grove of a small village is seen to north-eastward distant 2 to 3 miles. The coast between this and Jáshk is all very low, and probably swampy near the sea.

KÚH I MUBÁRAK is a very remarkable precipitous rocky hill, 330 feet high, and of cylindrical shape like a hat, standing quite isolated in the swampy plain, $3\frac{1}{4}$ miles North of Ras al Kúh, and about 1 mile inland. It is of light colour, and has a small hole in its upper eastern corner, which can be seen through when bearing N.W. It is visible 18 miles, and forms a good land-mark for the corner at Ras al Kúh : it is very conspicuous, except when seen against the light-coloured hills behind, when it is less so. On a bearing N.W. or S.E., when the low land is *down*, it looks like a rock standing in the sea.

RAS AS SHÍR is 14 miles N.N.W. from Ras al Kúh, the coast between them forming a slight bay. It is a very low point, with one or two huts on it ; at low water it dries off nearly half a mile from high-water mark. At $2\frac{1}{2}$ miles to north-eastward is a small village, with a few date trees, called Tújak. The nearest range of hills is 3 miles distant from the point, running about parallel to the coast. It is of light color, and at $3\frac{1}{2}$ miles E. by S. from the point has a peak on it, making in a quoin shape from the north or south, and a good mark for as Shír point. It is 720 feet high, and only $1\frac{1}{4}$ miles from the shore of the bay on the south side of this point. This ridge decreases in height to the southward, ending about 3 miles eastward of Kúh i Mubarak. The coast between the hills and the sea from this place, as far as Mínáb, is called Bíyábán ; and the district farther inland, from Ras al Kúh to Mínáb is called Baskard.

CAUTION.—A two-fathom flat of sand and mud extends 2 to $2\frac{1}{2}$ miles off this point. 20 fathoms are only $1\frac{1}{2}$ miles from the edge, and the soundings decrease regularly but quickly on to it ; so that unless the lead were going quickly, a vessel might easily run on it, the point being so low. By day, the discoloration of the water indicates approach to a shoal, but by night it would not be safe to approach the edge of this flat.

JEBEL KURRYE, 1,910 feet high, is a remarkable peak of light colour 11 miles N.N.E. of Ras as Shír, forming part of the second ridge of hills from the coast : when abreast of it, it makes with a jagged outline, but

from the north or south in a fine peak steepest on the east side, in fact, almost precipitous; the long range of hills it is on being a sharp ridge. Kurrye is visible 45 miles.

JEBEL BÍS or Brísq, 4,600 feet high, is $14\frac{1}{2}$ miles E. $\frac{1}{2}$ N. from the last. It is a great peak on the back range, visible 70 miles, and conspicuous on all bearings, except near the shore, when it is often hidden by lower ranges: from the northward or southward it has a conical form. This range extends to the south-eastward towards Shahú, and also a long way to northward, and there is a great valley between it and the Kurrye range.

Twelve miles N. by W. $\frac{3}{4}$ W. from Ras as Shír the coast projects, forming a very low point, mostly overflowed at high water, called Ras Kanári(?); there are many mangroves, and about 4 miles to northward of it is the entrance to the creek of the same name, used by boats of 20 tons burden. This is the nearest part of the Persian coast to the opposite promontory of the Ruweis al Jebál. The town of Kanári, position taken from Captain Brucks' chart, lies some distance inland. Captain Brucks says only it is a fort and town, situated up a river(?), and about 11 miles from the mouth. There are 20 fathoms 2 miles off this low point, and it would not be advisable to approach it by night, or in thick weather.

From this point the direction of the coast is N. $\frac{1}{2}$ W. for 24 miles to the village of Grú. The low coast continues for many miles above Ras Kanári, but a few miles south of Grú, sand-hills begin, and continue for some distance to northward of that place.

GRÚ is a small village and fort about half a mile from the coast, with a date grove. The people appear almost entirely agricultural, but one or two fishing boats were hauled up in a little creek formed by a watercourse. The fort is of white colour, and well seen from seaward in the afternoon. The sand-hills are 30 or 40 feet high opposite this place; the country inside them appears well cultivated. About 3 miles south of this is a small village called Tarúb, with many date trees.

The nearest range of hills is here about 3 miles from the shore, of irregular outline, but no remarkable peaks. Four fathoms is one mile off shore at this place, outside which it deepens quickly.

DIRECTIONS for the coast from Jáshk to Grú and Hormuz. The tide is little felt before approaching Ras al Kúh; it sets strong round that point, and along shore north of it, probably 2 to 3 knots at springs. The tide-hour is from about $9\frac{3}{4}$ to $10\frac{1}{4}$, the stream running 2 to 3 hours or more after high or low water.

After passing Jáshk the Arab coast would be seen, in very clear weather even before reaching that cape. Care must be taken in passing

Mason shoal, $3\frac{1}{4}$ miles W. by S. from Jáshk : off that point and Ras al Kúh, the soundings are too deep to be much guide to a vessel ; but 25 fathoms would be a safe depth between them, which will take her two miles outside Kúh i Mubárah shoal.

North of Ras al Kúh, a vessel ought not to come under 30, or by night 35 fathoms, till past the low point of Kanárí, when she may stand in, if a working breeze, to 8 or 10 fathoms by day, or 15 by night, as far as Hormuz island. With a fair wind, by keeping in 40 fathoms by night, she would round the Quoins at a proper distance ; if she deepened her water to 50 or 60 fathoms, she might get too near those islands, if a thick night ; by day, the eye is a good guide : 7 or 8 miles is a good distance off them. It is not advisable to approach the coast near Grú, or between it and Hormuz, if a shemál is likely to set in, as that wind blows here at W.S.W. with a very bad sea, and it would be dangerous to become embayed between Grú and the Mínáb Khor. No native vessels visit the coast, except such as can either be hauled up, or get into the creeks. Hormuz is the only available place of shelter, unless a vessel were far enough to windward to fetch into Kesm roads.

GRÚ to BANDAR 'ABBÁS.—The hills recede from the sea, leaving a large level district between them and the sea, from 10 to 20 miles or more in width, some parts of which are fertile. The coast, except just above Grú, is quite low, and swampy, with mangroves in places. The three-fathom line is about 2 miles off shore ; and there is no danger on the coast. This part, as far as Hormuz, is seldom visited by Europeans. Inland of this part of the coast are very high mountains, on some of which snow lies for some months.

KÚSTAK is a large village on the coast, about 14 miles N. by W. $\frac{1}{4}$ W. from Grú, and may be recognized by the fort, which stands on a peculiar little isolated hill, or rock, close to the eastward of it, and is 80 to 100 feet high. There are some date trees round the village. The inhabitants are chiefly fishermen. Half-way between this place and Grú, a low spur of the coast range of hills comes close to the sea, and is called Kulla (*i. e.* the point) by the boatmen. At Kústak, the nearest hills are about 2 miles from the coast, and hence fall back to north-north-eastward, the plain between them and the sea increasing in width to the northward.

Khargún is a small village with very few date trees, containing about 150 men, chiefly fishermen. It lies on the coast, about 6 miles N.N.W. of Kústak. The shore is low and sandy on both sides of this village, and the date trees and a tower in the village are the first things seen. There is a small creek here for boats.

KHOR MÍNÁB is a salt-water mangrove creek, the entrance to which is 17 miles E. $\frac{1}{4}$ S. from Hormuz fort. The bar is nearly dry at low water, and it is visited by boats not exceeding 20 tons burden, which come from Kesm and Bandar 'Abbás. At its head is the port of the large town of Mínáb, which carries on a considerable trade with those places. A great many boats, all of the size mentioned above, are employed in the trade; during a shemál, no boats can enter or leave, and some are annually lost on the bar. There are many similar mangrove creeks on both sides of this one, which is recognized, by the Arabs, by two large mangrove trees close together, a short distance to the southward of it. The creek runs from the bar N.E. for about $1\frac{1}{2}$ miles, through sand and mud flats, overflowed at high water; it then enters between banks grown with mangroves, and turns to S.E. for 2 miles, and then to E.N.E. for 4 miles more to the head, where the boats lie; its banks are everywhere flooded at high tide, and it decreases in size till it becomes a mere mud ditch at the head. There is a mud building here called Shahbandar, or custom house, but no other permanent buildings, the ground around it being occasionally flooded. The merchandize is carried between this place and Mínáb on camels and asses. At certain seasons, as many as 20 boats arrive and leave in a day.

MÍNÁB.—This town, commonly called Mínaio, lies $11\frac{1}{2}$ miles E. by N. of this landing-place, the road to it, for the first 2 miles, is over the mud flat around the custom house; and, after that, through date groves and gardens great part of the way, with several small villages scattered among the trees. The fort of Mínáb is on a spur of hills, on the lowest and first range from the coast, and is large and imposing, being built up the hill, enclosing a space of 200 to 300 yards square; but the materials being only sun-dried bricks, it is very dilapidated; there is a moat on the west side; on the south, a scarped ditch prevents access from the hills, and on the east and north it is washed by a small river. This stream here enters the plain from a gap in the hills; in floods its bed must be half a mile wide, judging from the boulders and rolled stones; but generally only 60 or 70 yards across, and about 2 feet deep. The water is clear and limpid, it flows to the southward from the fort, and, in its ordinary state, is absorbed in irrigation; but in floods it enters the sea somewhere near Khargún, as we were informed. It is in no way connected with the Khor Mínáb. As it has to be forded on the road from the Bandar, the communication is quite cut off during floods.

The bazar, which is well supplied, is without the fort, but inside the moat; the rest of the town consists of mat huts; and on the south side of it are extensive gardens and plantations. The Sultan of Maskat has a garrison of 100 Arabs here, who are relieved from time to time. The

district is under an Agha, who pays a tribute to the ruler of Maskat ; the people are well disposed to Europeans. The district produces much corn, which is exported to Maskat, *viâ* Bandar 'Abbás ; dates ; vegetables ; fruit, as melons, limes, &c. ; with sugar-cane, and sundry other articles. The imports are rice, piece-goods, dried-fish, &c. ; and exports, corn, wool, ghee, dates, &c.

MOUNTAINS.—Behind this place are two remarkable peaks, on the back range, about 3,000 feet high ; the northern one has a very jagged outline, and the southern, called on the chart, Overhanging peak, is a very sharp pinnacle, of about the same height, and, when bearing N.E., forms in an asses-ears shape. These two hills are at either end of a long level-topped range. Jebel Shemíl, 8,500 feet high, is a grand mountain, 30 miles from the coast, and visible 100 miles. It lies to N.E. of Bandar 'Abbás, and is very conspicuous from the entrance of the Gulf, being seen below Umm al Fíyárín. Its top forms in a bluff at the west side, and to the east of it, on a lower part, or spur of the mountain, is a remarkable cone, about 5,000 feet high. Jebel Genao, 7,690 feet high, is 16 miles N.N.W. of Bandar 'Abbás.* It forms a grand detached mountain mass, of irregular outline, with no very marked peak, and is visible 90 miles. There is a great valley between it and Shemíl, through which is seen, in clear weather, a great mountain, called Jebel Bakhún, rising to a height of 10,660 feet, which is 42 miles N. $\frac{1}{2}$ E. from Bandar 'Abbás, and makes with three little peaks. It is covered with snow during many months.

The COAST from the Khor Mínáb runs in an average direction W. by N. for 26 miles to Bandar 'Abbás. It is all low, desert, and swampy, and the eastern part covered with mangroves ; there is a mud flat off the whole extent, and 3 fathoms are about 2 miles off it. Nine miles eastward of Bandar 'Abbás, the coast bulges out, forming a point opposite to the island of Hormuz.

JEZÍRET HORMUZ is an island of circular shape, with a long low point at the north end. It is about 4 miles in length and breadth, and is covered with hills, excepting a plain, averaging a mile wide, on its north and east sides. The hills are of even height, about 300 feet, with a very serrated or jagged outline, and marked colours, red, purple, &c. ; in the midst, a few white peaks, looking like snow-covered hills, rise high above the general mass : the highest, which has a long slope to the eastward, and from the eastward or westward makes in a very sharp peak, is 690 feet high, and visible 26 miles ; it stands near the centre of the island, $2\frac{1}{2}$ miles S.S.E. from the fort. The hills, with the remarkable exception of the white peaks, are all of salt, with a thin incrustation of

* It was called by early voyagers the high land of Gombroon.

various coloured earth on them. There is also, on the south and south-east side, a range near the sea, not of salt. A few detached rocky hillocks stand on the east coast. The old city stood on the plain, on the north side of the island. The only remains now visible from seaward, are the Portuguese fort, highest part 45 feet, on the extreme north point ; and a minaret, 70 feet in height, standing by itself in the plain, 400 yards south of the fort.*

The present village of Hormuz is built almost entirely of mat huts, and contains about 400 men, who are employed in fishing and collecting salt ; they have about 20 fishing boats, and a few larger craft, which trade to Maskat and Bandar 'Abbás, chiefly with salt and salt fish. There is a guard of about a dozen Maskat Arabs in the fort, which is still considered a military post. In the hot months, most of the inhabitants leave the island for Mínáb, where they are employed in the date harvest.

Little is to be got here, there is water only in reservoirs, generally in very small quantity, that coming down from the hills, in rain even, being

* The Portuguese fort was built about A.D. 1515, the island having been taken by the Portuguese under Alphonso de Albuquerque in 1514 or 1515 ; it was surrendered by them to the English and Persians in 1622, after a siege of two months and a half. It is quadrangular, and has a moat, now nearly filled up, across the isthmus connecting it with the town, with the remains of a bridge across it, the other three faces being washed by the sea at high water. It is the most perfect specimen existing of the old Portuguese forts, but is much dilapidated. It is a bastioned fort with orillons, and casemates under the ramparts ; there are numbers of rusty old iron guns lying about on the ramparts, and the western side is much undermined by the action of the sea. There is a fine vaulted reservoir for water in the fort. There are only faint traces of the mosque, to which the minaret belonged. This has a winding staircase inside, but much broken ; the whole structure is worn away at the base, and appears ready to fall. Its exterior has once been inlaid with glazed bricks, of different colours, so as to form a pattern : these have nearly all fallen out, leaving their beds in the mortar, which still show where they once were. Of the town, which covered a space of about a square mile, little remains, except the foundations of the houses—those built close down to the sea are the most visible,—and an outwork or fort on the town wall, about a third of a mile to S.W. of the fort. There are also several hundred ruined reservoirs for water, most of which are full of earth, and are used to grow vegetables in. Three-quarters of a mile to southward of the fort, are many Musulman tombs, some with small domed buildings over them, which have once had some pretensions to architecture. On a little hill near the shore, $1\frac{1}{2}$ miles to the south-eastward of the fort, is the ruin of a small chapel, called Sta. Lucia on an old map in Astley's collection of voyages ; and on the summit of the nearest range of salt hills, nearly $1\frac{1}{2}$ miles south of the fort, the remains of another chapel, approached by a steep winding road, called on the same map N. S. de la Pena. It, as well as the road, is partly swept away by the dissolution of the salt foundation. Four miles from the fort, and at the south-east angle of the island, are considerable ruins called Tarampak, with remains of a garden and irrigating channels, also of a well, and terrace walls to support the soil ; this is on the only part of the hills not salt. On the same old map it is called King's Palace, Turumbake, and represented with many trees. There is an extensive burial ground there, and ruins on most of the hills round it.

complete brine. On the east side of the fort the coast forms a small bay, which, with the north point, is clear of reef: on the east and south-east sides the shore reef extends only a cable's length off shore. The south and south-west sides are cliffs, and shoal water appears to extend $1\frac{1}{2}$ to 2 miles off shore to south-westward of the island.

The anchorage is with the fort about West, half a mile off, in 4 to 5 fathoms, mud, or nearer for small vessels. It is quite sheltered from every wind except the Náshí, for which the native boats shift round to the westward of the fort. The straits between the fort and mud flat extending off the main, are $1\frac{1}{2}$ miles wide at the narrowest part, with 10 fathoms in them. Seven fathoms are close to the edge of the reef all round the island, and 12 fathoms 2 to 3 miles off on the south and east side, so that the soundings are a sufficient guide approaching it, except the spit on the south-west side, which has as deep water near it as there is farther off.

BANDAR 'ABBÁS * is a large town at the bottom of a bay in the northernmost part of this end of the gulf. The town stands on the beach, and has a front of half to three-quarters of a mile; the ruins of the old European factories are conspicuous; one of these, the Dutch, is in good repair, and the residence of the Sheikh. It is a place of great trade, and has a very fluctuating population, as, during the hot season, which is here almost insupportable, most of the population migrate to Mínáb, &c. During the cold season, there may be 10,000 to 12,000 inhabitants. The town is defended by a wall, with round towers at intervals, all more or less ruinous; and there is no cultivation or date plantation near it. The Sheikh of this place is governor, for the Sultan of Maskat, of the country between Shemíl and Khamír, and has authority over the Sheikh of Kesm. This town is the port of Kirmán: many baghalahs belong to it, or call there on their way from Bú-shehr to Bombay. The principal articles of trade are—sulphur from Khamír to Maskat; salt from Hormuz to Maskat; corn and dates from Mínáb to Maskat; wool, carpets, assafœtida, &c., from the interior to Bombay. Imports: piece goods, rice, &c., sent into the interior.† Some supplies, as, cattle, vegetables, rice, &c., and water, are procurable. The landing at low water is bad, as the beach dries off a long way.

* The English factory, of which only the foundations remain, is some distance to the westward of the town: of another, said to be the French factory, the walls are still standing. The Dutch factory is a large building fortified with a wall and towers. At a quarter of a mile north of the town, are about a dozen tombs of European residents, some, large and pretentious erections, but no inscriptions; the largest is a pyramid about 30 feet high.

† The caravans take 20 days from this place to Kirmán and 13 days to Lar.

The anchorage is in 3 fathoms, mud, one mile off the town, and for a large ship, in 4 to 5 fathoms, about 2 miles off. The holding-ground is good, and the roadstead well sheltered, except from south-eastward. From Bandar 'Abbás the coast runs S.W. by W. 5 miles to a low sandy point, forming the east entrance of the straits between Jezíret at Tawíláh and the main, called by Captain Brucks, Clarence Strait; the natives appear to have no general name for it, except Khorríyeh, or the "Straits." Two miles to south-westward of Bandar 'Abbás is a small village, with a fort and date grove, called Súruh, and half-way between these places is a small domed tomb on the shore. About 4 miles to the eastward of Bandar 'Abbás, there is a small village, called Náband, with a tower and a few trees, one of which is a large banyan tree.

DIRECTIONS for approaching Bandar 'Abbás. If working through between Hormuz and the main, there is no danger on the island side, but the edge of the mud flat lying off the mainland has 6 fathoms close-to, and it runs a long way off from the low shore. If passing between Lárek and Hormuz, there is no reef off Lárek, but the shoal water off the south-west side of Hormuz has not been properly explored, and requires caution in passing it, being steep-to. If working in, a vessel should not stand over nearer to Kesm town than $1\frac{1}{2}$ miles, or should not deepen her water approaching it to more than 27 fathoms, the deepest water being close to the edge of the 3 fathom bank off that place; the water also deepens on approaching Lárek island.

SOUTH COAST of JEZÍRET at TAWÍLAH.* This island, the largest in the Gulf, is 60 miles in length, E.N.E. and W.S.W.; its greatest breadth being 19 miles, but averaging only about 7. There are many towns and villages on it, and it is nearly covered with light-coloured table-topped hills, often very remarkable, having always precipitous, broken-down sides. It lies parallel to the coast, and is separated from it by Clarence strait, which varies in width from one to 7 miles. Off the south side lie the large islands Lárek and Henjám. All three are under the Maskat government. The south coast is free of danger as far as the Basídúh flat.

LÁREK ISLAND is $5\frac{1}{2}$ miles long N.E. and S.W., by $3\frac{1}{2}$ broad, and of oval shape, with a little low sandy point on the north side. It is quite barren, and covered with rugged hills; the highest peak, about a mile from the north shore, is 510 feet high, of a square form, and visible 24 miles; another, nearly as high, one mile S.W. of this, forms a fine cone, best seen when bearing South to East. The higher hills are partly volcanic, and

* i.e. "The Long Island." By the Persians it is styled in the same sense, Jezíret Diráz.

some, as at Hormuz, consist of salt. On the north side, nearly 2 miles from the low point, is an old fort built by the Dutch,* and a little village, the only one on the island, containing about 80 men of the Shaihín tribe, who are fishermen, and exceedingly poor. In the interior of the island are a few wandering herdsmen, about 40 in number, who are supposed to have come from Khasab. The villagers take their fish, and the ghee, &c., produced by the herdsmen, to Kesm for barter. They have but little water in reservoirs. The island is covered with stunted vegetation, and there are two small date trees near the village.

Lárek is deep-to all round, 15 fathoms being generally under half a mile off; on the south side, 40 fathoms are close outside that distance. To the S.W. of the island, there is a 17 fathom bank or ridge extending many miles to south-westward, with 25 to 30 fathoms between it and the shore: it has not been sounded; it is said the least water on it is 12 fathoms.

The anchorage is on the north side, between the low point and the village, in 13 fathoms, about half a mile off shore, and a quarter from the edge of the sands, which dry off some distance at low water; off the village the bottom is rocky, and the shore reef extends about a cable's length off shore. This anchorage is sheltered only from the Shemál, and is not a desirable one for any vessel not having business at the island.

KESM is large, and well built for an Arab town; there are several high wind towers (called Bádghir), which are peculiar to the Persian side of the gulf; it is situated on the coast, just to northward of the easternmost point of Jezíret at Tawílah, and may contain 6,000 inhabitants. Near the south end is an old Portuguese fort,† which is a conspicuous object from seaward; the highest building in the town is 50 to 60 feet high, and may be seen about 8 miles. There is a small date grove on either side of the town, and a short distance to the southward of it are many domed reservoirs for water. Many baghalahs belonging to this port trade to

* The fort is insignificant, and was evidently left unfinished; it is more than 200 years old.

† This fort, built in 1621, was besieged by the combined English and Persian forces, and surrendered to the English on Feb. 1, 1622. One of the very few English killed on the occasion, was William Baffin, who in 1616 sailed round Baffin's bay (Baffin sea). It is a quadrilateral bastioned fort, about 100 yards square, and surrounded by a moat, now crossed by a rude bridge. There are many rusty old iron guns on the ramparts. About a mile to N.W. of the town, on a little precipitous hill near the shore, are the remains of the English entrenched camp, 1820, which is on the site of some older fortification, possibly Portuguese. The mortality in this encampment during the hot weather was excessive.

Bombay, &c., and the Sheikh owns one or two grab* ships. The chief of Kesm exercises authority over the other towns and villages on the island. Much common pottery is made at Kesm, there being quantities of pottery clay on the island. The land behind the town, and to the southward of it, rises in a gradual slope up from the sea, ending in precipitous broken ground to the north and westward. The highest part is a table hill, 560 feet high, three miles west of the town.

Supplies.—Water is procurable here easily, from wells near the beach; also cattle, vegetables, &c.

ANCHORAGE.—East of the town are several banks of rock and sand, with $2\frac{1}{2}$ and 3 fathoms on them, the outer of which is $1\frac{1}{4}$ miles off shore, and is quite steep-to on the outside, having 30 fathoms within a mile of it, and 6 to 7 fathoms between it and the shore. There is also a $2\frac{3}{4}$ fathom rocky patch, a quarter of a mile east of the town, with 7 fathoms close to it. One mile south of the town, shoal water extends half a mile off shore.

The anchorage is with the Portuguese fort South to S. $\frac{1}{2}$ W., about three-quarters of a mile off, in 4 or 5 fathoms, in approaching which you will have to pass over $3\frac{1}{2}$ fathoms.

TIDES run strong off the town along shore, high water at full and change is about $10\frac{1}{4}$ hours. Rise and fall at springs about 10 feet.

The anchorage is well sheltered in a Shemál, and there is no heavy sea with a Náshí, but, with the tide, a vessel lies broadside on to the wind, and will ride uneasily.†

DIRECTIONS.—A vessel may pass on either side of Lárek, which is deep-to, and may be approached with safety to half a mile; she should not stand in for Kesm anchorage till the town bears S.W. to S.S.W., keeping about two miles off shore until on that bearing, to avoid the foul ground east of the town. By day the discoloration indicates the approach to its edge. There are 30 to 40 fathoms between Lárek and At Tawíláh. The south coast of the latter island below Kesm town may be approached to a mile; the soundings will be a guide approaching the edge of the shore reef.

The COAST from Kesm runs N.W. by W. $\frac{1}{2}$ W., 4 miles, to a point on which stands a long low table hill, about 100 feet high; there is no reef off it, but the sandy beach dries off about a quarter of a mile.

* Grab. Vessels with no bowsprit, the jib-boom projecting from a long cutwater: in shape the hull somewhat resembles the bagha'ah, in other respects they are rigged as square-rigged vessels.

† The roadstead between this place and Bandar 'Abbás was the rendezvous for the fleet (Indian Navy) and transports proceeding to invade Persia in the expedition of 1856.

At this point, which forms the south entrance-point of Clarence strait, the coast of the island turns to W. by S.

From Kesm the coast bends round to south and westward, having an average direction of S.W. for 25 miles to Ras Kharguh, the entrance-point of Henjám sound. At 3 miles West of Kesm the table-land ends; and there is a low plain extending quite across the island, and several miles in breadth, to the westward of which the table hills begin again, and continue without interruption the whole distance, almost close to the sea, decreasing in height towards Ras Kharguh, and precipitous on the sea face. The only hill at all recognizable is a square lump, somewhat higher than the rest, opposite the town of Shúzá, and about 500 feet high. The mountains of the mainland are seen over the island; they are described with the shores of Clarence strait.

The soundings are bold, and there is no danger on the coast: 20 to 25 fathoms being only a mile off shore. The shore is quite exposed to a Shemál, which blows at W.S.W. to S.W. by W. Just below Kesm, opposite the gap in the hills, the coast forms a rather deep bay, about 8 miles across, in which the shore is low and sandy, to the south-westward of which it is rocky in patches, with little sandy beaches between, as far as Ras Kharguh.

SHÚZÁ is a large village with a date grove, on the coast, 10 miles N.E. of Ras Kharguh: it stands under the eastern part of the table hill before mentioned, by which its position may be known from the seaward. Half a mile east of the town is a ruined tomb or mosque on the little cliffs.

Two miles N.E. of this mosque is a flat, rocky islet with perpendicular sides, lying a quarter of a mile off a small rocky point; and behind the islet is a small bay with $1\frac{1}{2}$ fathoms, in which native boats find shelter in a Shemál; on the east side of the bay are two or three similar smaller rocky islets, nearly joined to a point of the main at low water, with another small bay to the eastward of them. Mesen, a small village with about 50 men, stands on the coast 6 miles S.W. of Shúzá.

RAS KHARGUH is low and rocky, the hills sloping down in very broken ground to it. To south-eastward of this point, the bottom is rocky and uneven, with 3 fathoms half a mile off shore; and 1 mile S.E. of it there is a 3 fathom patch, hard bottom. From this point to Shúzá, the 3 fathom line is about half a mile off shore, and inside it there is foul ground; outside of that depth the bottom is mud. At Ras Kharguh the coast turns to northward, forming a deep bay between it and Ras Salak, which has been called Diristán bay, from the village of that name, situated near the bottom. To south-westward of it there is a channel a mile in width, between it and Jezíret Henjám, which is the anchorage known as Henjám sound.

JEZÍRET HENJÁM is a barren hilly island, 5 miles long in a N.N.E. and S.S.W. direction, by $2\frac{1}{2}$ broad. Seen from the east or west, it has a valley or gap in the hills near the north end, which, at a short distance, causes the island to make in two pieces: on the south side of this valley is a remarkable table hill, 348 feet high, which is the highest on the island, and visible 20 miles. From the south this hill is not seen, and there is nothing to characterize the island, but the dark colour of most of the hills, compared with those on At Tawíláh, and their rounded or peaked shape: they decrease in height towards the south end of the island, which is comparatively low. There is a small village on the southern part, not seen from seaward, the people of which keep some goats on the island: nothing is obtainable here, except perhaps, after rain, some water in one or two of the ruined reservoirs* at the north end.

The island is covered with coarse grass and brushwood, and, it is said, there is a well of good water about a quarter of a mile from the south-east point of the island.

The shores of the island consist of rocky points with little cliffs, and sandy beaches between; excepting at the north point, which is low sand, and has 8 fathoms a cable's length off; the shore reef extends from half to quarter of a mile off shore, and is deep-to. On the south side 30 fathoms are one mile off. The depths in the sound are from 8 to 16 fathoms. The best anchorage is with the low north point West, a quarter of a mile off shore, in 9 fathoms sand: this is sheltered from all the prevailing winds.

DIRECTIONS.—In entering or leaving the anchorage by the eastern channel, do not approach the south side of Ras Kharguh nearer than a mile; on the west side of that point there is no danger, the soundings shoal regularly but quickly: on the island side spits extend nearly half a mile off the east and north-east points, which are steep-to, having 16 fathoms quite close to them. In working out round the north end of the island, avoid a detached 3 fathom bank 1 mile N.E. of the low north point, and half a mile from the main: the north west side of the island must not

* There are two small ruined mosques or tombs near the north point, the eastern one white, the other red; also 20 or 30 reservoirs for water, all arched over, but now ruinous or choked up. There are also mounds of rubbish indicating the remains of a large town, probably of one of those Mahommadan towns which flourished about five centuries ago. It is said trade was carried on with the interior viâ Laft and Khamír. Dr. Gemelli Carreri put into Henjám for water, in Nov. 1694; he found the cisterns dry, and adds, "it was not inhabited, because it was burned down by a Portuguese general." In 1858 there was a small fishing village on the north point, but it has been deserted in consequence of a feud with the other village at the south end, when most of the people of the northern village were killed. In the hills about a mile to the south-eastward of the table hill, are deep holes or quarries cut in the hill side, apparently old iron mines.

be approached nearer than three-quarters of a mile, on account of a spit, which has 8 fathoms quite close-to, the water rather deepening on approaching it. The soundings are a guide standing over into Díristán bay, in which the water shoals regularly : Ras Salak is safe to approach to half a mile. The soundings N. and N.W. of the island are somewhat irregular, 6 to 16, and even 20 fathoms ; and between the island and Ras Salak there are 6 and 7 fathoms quite across, from the island to the main. In a Shemál it is preferable to enter the anchorage from the eastward.

DÍRISTÁN,* a village with a few date trees, $1\frac{1}{2}$ miles from the coast, at the bottom of the bay to westward of Ras Kharguh, and bearing N.N.W. $\frac{1}{2}$ W. from the north point of Henjám. It contains about 100 men, and they have a few boats. At 1 mile N.W. of this place is a remarkable, long, quoin-shaped hill, with the bluff to the westward : and between this and the hills to the northward of Ras Kharguh is a large swampy plain, extending quite across the island.

RAS SALAK, the west point of Díristán bay, 7 miles west of the north point of Henjám, is sandy, with rocky beach ; the shores of the bay are low and sandy from this point, nearly as far as Ras Kharguh : the hills are here about 2 miles from the shore. The general direction of the coast to Ras Dustakún, the south-west point of Jezíret at Tawílah, is W. by S. $\frac{3}{4}$ S. To the westward of Ras Salak the shore forms a bay, in which, $2\frac{1}{2}$ miles W. by N. from it, is the small fishing village of the same name, with about 30 men. There are a few date trees, and some wells. The British force was stationed here for a short time after its removal from Kesm in 1821.

RAS TARKÚN is a small rocky point 8 miles W. by S. $\frac{3}{4}$ S. from Ras Salak ; and $7\frac{1}{4}$ miles farther to the westward is a small point where the hills come close down to the sea, called Namakdún (i.e. the place of salt). About half way between these two last points, and 2 miles from the shore, stands the highest hill on the island, called Kishkúh, which is 1,300 feet high, and has a small table top : it is easily recognizable from seaward, and is visible about 40 miles. About half a mile East of Namakdún point a range of dark hills runs across the island, the only hills on it not of light colour, and the southern part of these is in a great measure composed of salt. At the foot are some large salt caves,† and the brine which drips from them runs out into the little plain between them and the sea, and

* There are still some remains of the old British camp, which was established here in 1820.

† These salt caves are of great extent, and present a beautiful appearance, from the incrustation of pure white salt, and the great stalactitic masses hanging from the roof, some of which are six or eight feet in length, and proportionately thick.

evaporating there, leaves a deposit of salt, which is carried away in boats to Lingeh, and to places on the Arab coast.

The soundings from Henjám as far as Namakdún are regular, 20 fathoms being 6 to 7 miles off shore; but, off it, commences the great bank known as Basídúh flat, which is a shoal of sand and clay with $2\frac{1}{2}$ to 3 fathoms on it, extending 7 to 9 miles off the island, and from opposite this point to 5 miles west of Ras Dustakún, having a channel between it and the island with 4 to 6 fathoms.

RAS DUSTAKÚN is the low, rocky, south-west point of At Tawíláh island; here the coast changes its direction to North, towards Basídúh point, which bears N. $\frac{1}{2}$ W. 7 miles from this. The shore forms two shallow bays, to eastward of the point. The passage between the flat and the island, which commences off the Namakdún point, is 1 to $1\frac{1}{2}$ miles in width, with soundings of 4 to 5 fathoms; it is close to the shore, and may be used by steamers, or with a fair wind: see also directions for Basídúh.

From Namakdún point there are low hills close to the shore for 4 or 5 miles, as far as the little hamlet of Kawaní, which stands about a mile from the sea, with a few date trees near it; and thence to Ras Dustakún there is a plain about 2 miles wide, between the hills and the sea; in which, about $1\frac{1}{2}$ miles N.E. of the point, stands the little village of Dustakún.

The Hummocks, are three remarkable hills to the north-eastward of Ras Dustakún, useful as landmarks when entering Basídúh roads. The western hummock, 2 miles N. $\frac{1}{2}$ E. from the point, is table-topped, and the lowest of the three. The centre, which bears N.E. by E. two-thirds of a mile from the western, has a rounded top. The eastern, and highest, is 585 feet high, and bears N.E. by E. $\frac{1}{2}$ E. $1\frac{1}{2}$ miles from the western; it is table-topped, has a little bush on the top, and may be seen 25 miles. All three are quite precipitous on the south face, and the eastern is nearly joined to a long range of table-land, a little lower than the hummock, which extends 4 miles to east-north-eastward, with a precipitous face to southward, and ends in a bluff. Two miles E. by N. from this bluff is a table hill or hummock 550 feet high, standing in the plain north of Kawaní village, and to the eastward of this are ranges of lower hills extending as far as the salt hills.

CLARENCE STRAIT is the name given by Captain Brucks to the passage between Jezíret at Tawíláh and the main, which is navigable for ships, but very intricate; the survey of it is incomplete, and it would not be safe to attempt the passage without a pilot, especially as the tides run strong.

Mountains on the main land.—The great chain of mountains of which Jebel Genao forms the eastern part, trends to West and W. by N. into the interior. At 18 miles W.S.W. from Genao is a remarkable mountain, 5,120 feet high, with two great steps or notches on its western side; and west of Genao 55 miles, is a high peak on the same range, visible over the other mountains far out at sea, and even off Ras al Kheimh: this peak is 9,200 feet high, and has snow on it in winter; it forms in three little peaks from the southward. To the west of Bandar 'Abbás, between this range and the sea, is a range of low mountains about 1,000 feet high, running East and West, and ending about 20 miles from that place.

Another range of mountains commences at Khamír, and, like the last, also runs to westward into the country. The easternmost peak on this range, called on the chart Khamír peak, bears N.E. by E. 8 miles from Khamír town; the range begins about 5 miles to the eastward of it, there being a great valley between it and that last described. Khamír peak has a small pointed peak on the highest part, and is 3,700 feet high: 13 miles west of it, on the same range, is another peak much higher, but not very conspicuous in shape. From it a great branch or spur of the chain runs to south-eastward; at the foot of which, 4 miles west of the town of Khamír, are the sulphur-hills.

A third range commences N.N.E. $\frac{1}{2}$ E. 10 miles from Basídúh point, and continues in a westerly direction, apparently uninterruptedly, for a great distance. The summit of the range opposite Basídúh is 2,940 feet high, and of rounded or convex outline. There is a great valley between this and the Khamír range, the coast at the mouth of it being low and swampy.

Shores of Clarence Strait.—From the table hill point N.W. of Kesm town, already described, the south shore of the strait runs W.S.W. for 19 miles, the coast of the main being nearly parallel with it. Close to westward of this point is a small backwater running into the low land north of Kesm great table hill, in which native boats are hauled up; there are two little islets, called Dúkúhak, on the west side of the entrance to this creek, which is called Khor Tawaleh. Two miles W. by S. of this is a peaked precipitous hill near the coast, of light colour, apparently of clay, and about 300 feet high, with a little low point off it. At $6\frac{1}{2}$ miles W. by S. from the table-hill point, is a remarkable quoin-shaped hill with a small tree on the summit; the bluff is to the southward, and it is 300 to 400 feet high. Between this and the peaked hill, the shore forms a small bay, where boats anchor in a Náshí, called Bandar Salsúl.

Dargúwan is a little village $1\frac{1}{2}$ miles S.W. of the tree-quin hill, inhabited by about 50 men, chiefly fishermen: there are some date trees here. From the Quoin hill a shoal with 1 to 2 fathoms on it,

and steep-to, extends upwards of a mile off shore, as far as Bandar Tawaleh. The navigable channel of the strait is just outside this bank, and is contracted to 4 miles wide opposite Dargúwan by a shoal lying in the middle of the straits, which commences north of this place: here there are 10 to 12 fathoms in the channel. Eight fathoms are close to the edge of this bank, which extends $3\frac{1}{2}$ miles to the south-westward, or past the village of Kúweī, and is dry in some parts at low water; the bottom is said to be hard sand. The channel to northward of this bank is not navigable, there being great overfalls. The shore of the mainland forms a low point at about 7 miles North of Dargúwan. A short distance inland of this is a range of hills, extending to within a few miles of Bandar 'Abbás; they end about 6 miles west of this point, and thence the coast is low and swampy, with mangrove jungle, as far as the mountains behind Khamír; it is only approximately traced, and cannot be approached by ships. The average direction is W.S.W. as far as the town of Khamír.

Kúweī is a very small village, with a date grove, about 3 miles West of Durgúwan; there is a large ruined mosque here close to the beach, it having been a considerable place before the pirate times.

Zeinubí is a village with about 200 men, 3 miles S.W. of the last, it lies in a thick date grove about a mile from the shore.

Peīpusht is a village with about 100 men, chiefly boat-builders, who work at Kesm. It is built up the slope of a hill half a mile from the shore, and is well seen from the strait.

The coast of the island is clear of danger between Dargúwan and Zeinubí; the clear channel is contracted to 1 mile in width opposite the latter place, by a second middle-ground bank, which runs to westward from this, for 7 miles, as far as 'Ala Múlk: this bank also is steep-to, having 7 to 9 fathoms close-to; it is sandy, and generally shows only by the tide mark, the water being here discoloured quite across the straits. The channel is deeper than shown on Capt. Brucks' chart; the passage on the northern side of the middle-ground bank, though 3 to 4 miles wide, is not navigable.

At Peīpusht the shore of the island turns to west-north-westward for 8 miles to Laft point, which is the north-west corner of a broad projecting point of the island; at $3\frac{1}{2}$ miles eastward of this is a small fort on the shore with a few trees, called 'Ala Múlk. At nearly a mile S.W. of this fort is a quoin-shaped hill, with two tombs, one with a dome, on its southern and highest bluff, which is elevated 200 to 300 feet.*

* This hill is covered with ruins, and there are many reservoirs on it; at its low north end, where alone it is accessible, the remains of a wall are to be seen built along the edge.

Half way between 'Ala Múlk and Laft point, and on the northernmost part of the projecting point, which is low and rocky, stand two ruinous mosques, some reservoirs, and a date plantation, but no houses, called Laft Kedím (or old Laft). Opposite this place the shore of the mainland is only $1\frac{1}{4}$ miles off; it is low, and on it, at the narrowest part, are some ruined watertanks; this point is called Púl (the bridge) or Behil. From this place the shore is swampy for many miles to the eastward, and to the westward the coast runs to W. by S. for 10 or 12 miles, or till past Khamír.

The shore from Peipusht till past 'Ala Múlk is skirted by a rocky reef, with deep water inside in places, and extending half to one mile off shore; it is quite steep-to, especially off 'Ala Múlk, where the clear channel is only three-quarters of a mile wide, between this shore reef and the end of the middle-ground shoal before mentioned. The depths in the channel are 14 fathoms, and 19 in the narrow part opposite Púl, the bottom being rocky in the deep part.

KHAMÍR is a fort and town on the mainland $7\frac{1}{2}$ miles W. $\frac{1}{2}$ N. of Laft point. It has a large fort, with a high square tower in the middle: the town, which contains about 200 men, is without the walls, and has a date grove to the eastward of it; the foot of the range of mountains behind this place is about a mile distant. The town lies half a mile from the shore, or port, where there is a small building for storing the sulphur exported from this place. The port is approached by a small creek, admitting boats of 20 to 30 tons only, which take the sulphur hence to Bandar 'Abbás. Millstones also are exported from this place. There is a small Arab garrison here belonging to the Maskat government. The sulphur mines are in hills at the foot of the mountains, 3 to 4 miles west of the place, and are very productive; they are, of course, worked very rudely, but would afford a very large supply if there were a demand for it, and they were properly conducted. It is a monopoly of the Sheikh of Bandar 'Abbás; 100 to 150 men are employed, and the monthly export is about 15 tons. They have been worked for a very long time.

The coast line runs to West and S.W. from this place to the mountains opposite Basídúh, it has not been traced, and is fronted by extensive mangrove swamps, intersected by numerous creeks. There are two rather remarkable pyramidal hills in the plain, 2 and 3 miles W.S.W. of Khamír town, they are about 150 feet high, and a short distance only from the edge of the swamp.

From Laft point the coast of the island turns to S.E. by S. for 6 miles, and then resumes an average west-south-west direction to Basídúh point; the whole width of the strait is much increased to the westward of this point, but blocked up with mud and sand banks and mangrove swamps.

From this point there are two channels used by ships, as far as Gúrán village, where they unite again.

LAFT is a town with about 200 men, 3 miles S.E. of Laft point. It is built at the foot of a hill sloping up from the beach, 200 feet high, and ending in cliffs to landward, with several towers and a wall built up the north side; the hill besides has been scarped where accessible. The small square fort behind the town remains in the ruinous condition it was left by the British expedition of 1809.* This is a place of some trade; much firewood, which is cut in the swamps, is exported. Many baghalahs, from Lingeh, &c., are sent here for repair, and some are built here. Fresh water only in reservoirs, and no vegetables procurable; perhaps a few cattle and some poultry. Good fish are caught here, as also at other places in the straits, and a great deal is salted and exported.

A small creek runs up to the town, close along the shore, in which the native vessels lie. Its entrance is at the south end of a low islet, called Hinderábí, which has a little ruin on it, and lies one mile south of Laft point, separated from the main island by a very narrow channel. Laft creek is narrow, and has mud banks, with mangrove bushes, between it and Khor Gúrán.

One mile E.N.E. of Laft town is a remarkable hill, 500 to 600 feet high, visible nearly 30 miles, it is said to have ruins of reservoirs, &c., on top.

KHOR GÚRÁN is the eastern of the two navigable channels mentioned above, it is narrow, in some parts under a quarter of a mile in width, but generally preferred by the pilots, as the water is deep (5 to 15 fathoms), and the banks are of mud, and well defined by the mangroves on them. Its course is tortuous, being south from Laft point for 9 miles, passing about one mile to westward of that town; thence N.W. for $2\frac{1}{2}$ miles; and then turning sharply to S.W. and S.S.W. 9 miles more, to the village of Gúrán. It then trends to W.S.W. for 2 miles, when it re-unites with the western or main channel. This last reach is the most difficult part of the passage; it is very narrow, with 12 to 15 fathoms, and the banks are covered at high water, and have no mangroves on them.

From Laft the edge of the hills runs to S.S.E. across the island, leaving a large plain or valley quite across to Díristán bay, the hills on the west side of which extend almost uninterruptedly to the west coast of the island. The great swamp to south-eastward of Laft is only approximately delineated.

Gúrán is a small village, resorted to, like Laft, by many boats, for

* This fort was taken on Nov. 27th, 1809, by the expedition against the pirates, with great loss on our side.

firewood, which is sent to all parts of the gulf; large quantities are kept stacked on the shore ready for shipment.

KHOR MASÁGAH is the name given to the western branch of the strait, and it appears to apply also to the part between Laft point and Kesm. This channel is seldom used by the pilots, although broader than Khor Gúrán, being three-quarters to $1\frac{1}{4}$ miles in width, with depths of 7 to 14 fathoms, as the banks on either side are under water, are often steep-to, and do not show in the muddy water of the straits. Its direction is west for 4 miles from Laft point, and then 14 miles S.S.W. to the junction with Khor Gúrán. From the junction of the two channels, as far as Basídúh, the strait is called by the natives Khor Jaffrí; its direction is W.S.W. and W. $\frac{1}{2}$ S. for 16 miles to Basídúh point; it is nearly parallel to the coast of the island, and for 10 miles lies within half a mile of it. The navigable channel is 1 to $1\frac{1}{2}$ mile wide, with 8 to 12 fathoms in it, and sandbanks on its north side, which render the remaining part of the width of the strait unfit for navigation.

Between Gúrán and Basídúh are the following villages:—Cháhú, about 7 miles from Gúrán, a small scattered village chiefly inhabited by fishermen, about half a mile from the coast, with a date grove to the N.W. of it; this place is opposite Kishkúh hill, already described, and there is a white tomb near it, which is seen from the strait. Dúlú and Tersey, two small villages, with date trees, about 3 miles from the last; the inhabitants are cultivators and fishermen. Kúnársíyeh a larger place, 1 mile from the last, and $9\frac{1}{2}$ from Basídúh point, lies about a mile from the shore, and has a date grove north of it. Neither of these three last are seen from the sea. Dirakú has several water reservoirs, with some cultivation, and a date grove to the northward of it; it stands a mile from the sea, on a little rising ground, and is 7 miles from Basídúh: between this and the last village the coast forms a low point. Lastly, Gúrí a large village 5 miles from Basídúh, with an extensive date grove, and much cultivation between it and the strait; most of the vegetables and fruit supplied at Basídúh are brought from this place and Dirakú; these two villages are visible from the strait; the inhabitants are cultivators: there is a pass here through the hills to the south coast. From this place the shore is low and barren as far as Jil'et Haji Karítú, a ruined fort, on a small rocky mound, close to the sea, 2 miles east of Basídúh point. Half a mile to S.W. of this hillock is a large date plantation, with a few houses, called Nakhlestán, where are some wells of good water.

Eight miles East of Basídúh a mud flat commences, extending from half to 1 mile off the island, as far as Basídúh point, and all nearly dry at low water. At $5\frac{1}{2}$ miles to eastward of Basídúh is the east

end of a middle-ground shoal, which extends to within 2 miles of the point, and lies $1\frac{1}{2}$ to 2 miles off shore, having $1\frac{1}{2}$ to 3 fathoms on it: the channel for shipping is to the northward of this shoal, and about a mile in width; the passage between it and the island flat being very narrow. On the north side of the navigable channel a sandbank runs nearly east and west from opposite Gúrán; its distance off the island increasing from $1\frac{1}{2}$ mile at that place to $2\frac{3}{4}$ miles opposite Basídúh. It has from half to 2 fathoms on it at low water.

The main land North of Basídúh is $7\frac{1}{2}$ miles distant, the mangrove swamps ending about 5 miles to the eastward. The mountains here come close down to the strait; they are rugged, barren, and almost inaccessible, and run in an east and west direction, their eastern end bearing N.N.E. $\frac{1}{2}$ E. from Basídúh point. There is a remarkable gorge in the mountains, N. $\frac{1}{2}$ W. from that point, in which is a spring of water, strongly impregnated with sulphur: from this, the coast turns to southward, leaving the hills, and forming a low point, $4\frac{3}{4}$ miles N.N.W. of Basídúh. There is a date grove on this point, and many ruined reservoirs, &c.; 2 miles to northward of it is a small hamlet and date grove, called Birket Sifleh.

DIRECTIONS.—It would not be prudent to attempt the passage through Clarence strait without a pilot; the large scale survey not being sufficiently correct to navigate by. There are professional pilots for the strait, who reside at Kesm, and would have to be sent for, if starting from Basídúh: they may be trusted entirely with the navigation of the ship. The following remarks are offered, as the result of the authors' experience.

Working through the strait must be done by tide work, anchoring as soon as the stream turns against you.

Leaving Kesm, after passing the low table-hill point, the shore bank between Khor Tawaleh and the tree-quin hill must be avoided, it extends more than a mile off shore; and if working, tack on its edge in 7 fathoms. After passing the Quoin hill, you may keep close along shore as far as Peipusht: if working between these places, tack on the middle-ground shoal opposite Dargúwan in 8 fathoms.

The first point after passing the large mosque at Kúwei is of low cliff, and to north-westward of this begins the second middle-ground shoal; working between which, and the rocky bank on the island side, requires great care. The channel is under a mile in width, and the pilots tack in 11 fathoms on either side, the water being deeper than shown on Capt. Brucks' chart: they say a quick-working vessel might tack in 10 fathoms on the south, and 8 on the north bank, which would be very close.

From 'Ala Múlk as far as Laft point the passage is clear of danger ; but the bottom is rocky, and bad for anchorage : * after passing that point it is generally mud.

After passing Laft point, Khor Gúrán is the passage generally used by the pilots ; indeed there are few of them who will undertake to take vessels by the western passage, for which the authors are unable to give any directions. In Khor Gúrán, the banks are everywhere a guide, either in sailing or working : in the first reach below Laft, the pilots tack in shoal water on the west, and deep water on the east side. In the narrow part thence to Gúrán, the vessel has to put about again as soon as she has gathered headway. The only difficulty appears to be at the entrance, West of Gúrán, where the banks of the Khor are under water. You may then keep along the shore of the island, at about half a mile off, as far as Dirakú village, when it is usual to cross over to the north bank, and run along it in 5 fathoms, till past the detached bank lying off the island between that place and Basídúh, when you may stand across for the anchorage.

BASÍDÚH is a small village on the north-west point of Jezíret at Tawíláh, and the depôt of the squadron stationed in the Gulf. The point is of low cliff, 20 feet above high water, and level on top, with a few small buildings scattered about, and some date trees. The Government buildings are ; a hospital for invalid seamen, a small storehouse containing some ship's stores, a cooper's shed, a forge, and a house for a small guard of sepoy's stationed here. There are also three water reservoirs ; a jetty, extending only to low water mark ; and a store of coal, lying in the open air, and covered with a layer of mud laid over mats, which, in this dry climate, is found an efficient way of preserving it from the disintegrating effect of the sun and air. The remainder of the village consists of 2 or 3 houses built by officers of the squadron, one of which, a quarter of a mile south of the point, has a flagstaff, on which the union jack is hoisted when any ships are in the roads, and is the first thing seen from seaward ; a small bazar for the supply of bumboat stores to the seamen ; the house of the Persian merchant who supplies the vessels with provisions, which is the best building in the place ; and a scattered village of donkey-owners, washermen, &c., who depend for their living on the casual visits of the vessels of war.† There is a small chapel close to the jetty and hospital, built by the Indo-Portuguese servants, &c., of the vessels.

* The pilots avoid anchoring in this part, if possible.

† Just east of the present village there are the ruins of a rather large town, the mounds extending more than half a mile along the shore ; also of an European factory, either

Supplies.—The merchant above mentioned supplies the ships with all necessities, except salt meat and spirits, at a certain fixed rate. Good water is obtainable only in limited quantities; when the three government reservoirs are empty, it has to be brought from Nakhlestán, and a ship would save time by going to Lingeh, or some other port on the main, to fill up. Coal.—There are always a few hundred tons here belonging to Government, brought at great cost from Bombay.

TIDES.—The rise and fall at springs is 10 feet; at neaps 2 to 4 feet; high water at full and change at 12 hours. The tide stream, setting to westward through the straits, begins here 1 to $1\frac{1}{2}$ hours before high water, and the east-going stream, the same time before low water; this latter has always been called the flood. The set of the tides between the point and flat is not sufficiently made out. On the flat, clear of the island, the tide sets E.N.E. and W.S.W., and the stream runs 3 hours each way after the turn of tide, so that it appears to make at half tide, as shown by a gauge. The tides run 1 to 2 knots, and in some parts of the channel even more.

The ROADS.—Beacon shoal.—Five-eighths of a mile W. $\frac{1}{2}$ N. from the point is a beacon, consisting of a ship's mast with a cask on it, about 40 feet high, and visible 6 miles, on the north end of a long narrow shoal, which runs to S.W. $\frac{1}{2}$ S., $3\frac{1}{2}$ miles, and is rocky near the beacon end, the rest being a sandy spit. It is dry at low water for three miles from the beacon, and thence deepens off gradually in a tail, bending round to south and S.S.E. This shoal forms the shelter to the anchorage against the shemál, which here blows at S.W. by W. There is a narrow deep channel between the Beacon shoal and a mud flat extending off the west side of the island, but not navigable. The beacon shoal is deep-to, having 8 to 10 fathoms, the deepest water in the channel, close to its edge.

Anchorage.—Parallel to Basídúh point, and rather less than half a mile off it, is a deep gut, with 15 to 16 fathoms in it, which ships should avoid anchoring in. The anchorage is on the belt between this and the point; the available breadth of anchorage ground being under a quarter of a mile, between the gut and the three-fathom line.

The best anchorage is immediately after crossing the gut, in 7 to 5 fathoms, at low water; and either opposite the jetty, or thence as far as the storehouse, and a quarter to one-third of a mile off shore. The bottom is clay, very good holding ground. It is advisable to moor, as the winds blow strong against the tides, and a vessel is apt to foul her anchor, or, at any rate, lies very uneasily: open hawse should be to southward.

Dutch or Portuguese, with several ruinous reservoirs. The first establishment of the British here took place in 1821, when the field force was brought here from Salak. Since its withdrawal in 1823, it has been made a small depôt for the naval force.

Off the jetty, a small rocky spit, nearly dry at low water, extends 270 yards off shore, with $2\frac{1}{2}$ fathoms close to its outer edge. A flat of sand and rock, nearly dry at low water, begins off the hospital, where it extends one cable off shore, and, at one mile to eastward of Basíduh point, is nearly half a mile in extent.

The shore between this point and Ras Dustakún, the south-west point of Jezíret at Tawílah, see page 156, is low, except opposite the hummocks, where some broken rocky hills come close down to the shore. A flat of mud and sand, already alluded to, lies off the coast for near 5 miles south of Basíduh, extending in some parts over $1\frac{1}{2}$ miles off shore. Dustakún point is clear of danger, and there is a passage, a mile wide, close to southward of it, leading to E.N.E. along the south shore of the island, and to W.N.W., over the tail of the beacon shoal, in $3\frac{1}{2}$ fathoms, into the entrance channel of Basídúh harbour.

The flat (see also page 156) is a great bank, with $2\frac{1}{2}$ to 3 fathoms on it at low water, lying off the south-west end of the island, and separated from it by the channel just mentioned; it extends 8 miles off the south, and 5 miles off the west side of the island. The soundings are a guide approaching its southern edge, if the lead is going quickly; by day, the discolored water, extending some distance outside the bank, is a good guide: 20 fathoms are 2 to 4 miles from the edge, which is steepest at the south-east corner. Off its west side the water deepens very gradually, there being soundings under 5 fathoms, quite across, till near Kung, on the Persian coast.

The north bank is a continuation of the middle-ground shoal of Clarence strait, which begins near Gúrán; it takes a south-west direction from opposite Basídúh, ending 6 miles W.S.W. of the point. It has 3 fathoms on the tip, and shoals thence to north-eastward. At 5 miles W. by S. of the point, there are $2\frac{1}{2}$ fathoms on it at low water; further to north-eastward, 2 fathoms; and N.W. of the point, only $1\frac{1}{2}$. It is of hard sand.

In the entrance channel, which is 2 miles wide between the pitch of the north bank and the north end of the flat, there are only $3\frac{1}{2}$ fathoms at low water; the channel then lies between the north bank and beacon shoal, and widens a little as far as the anchorage. The water deepens to 6 and 7 fathoms in the centre, and 8 or 10 near the beacon shoal; opposite the beacon there are 7 and 8 fathoms in it nearly all across. The water shoals regularly on the north sand.

ASPECT OF COAST.—The Persian coast, from the low point (already described) opposite Basídúh, has an average direction of S.W. by W. $\frac{3}{4}$ W. for 14 miles. A range of hills, 1,330 feet high, which commences a short distance West of this point, ends in a plain 7 miles to the westward of it.

These hills, which run back and appear to join the mountains behind, have no remarkable peak on them; their outline is very irregular, and the eastern half is of light, the western, apparently volcanic, of dark colour. They are about half a mile from the shore.

The great range opposite Basídúh runs inland in a westerly direction, and at $17\frac{1}{2}$ miles N.W. $\frac{1}{2}$ W. of Basíduh point, there is a remarkable notch or saddle, between two little peaks, on the summit of the range, known as Grubb's Notch; it is an useful landmark when rounding the flat.

At 4 miles S.W. of the coast range last described, another range of hills commences, its eastern end being close to the shore. It forms a detached mass of hills, about 7 miles east and west, by 4 miles, and has an extensive plain between it and the Grubb's Notch mountains. On the north-eastern side it has a long ridge of light-coloured hills, of very jagged outline, and 960 feet high, running E.S.E. and W.N.W., and rather remarkable when on that line of bearing. The rest of the range is of dark volcanic hills, and there is a flat-topped conical hill, near the shore, $4\frac{1}{2}$ miles N.E. of Kung, which is conspicuous from the eastward, or when it opens out clear of the rest of the mass of hills. Three-quarters of a mile to eastward of this is a similar smaller hill close to the sea, called Búza.

SOUNDINGS.—There is shoal water upwards of a mile off Búza, outside which there is a gut or khor of deep water, from half to one mile broad, with 8 to 13 fathoms in it, running parallel to the general direction of the coast, as far as the point opposite Basídúh. Outside this khor, and between it and the north bank, the soundings are 4 to 5 fathoms, so that, when standing in towards the coast, the increase of depth is a good guide for tacking.*

Two miles to eastward of Búza the shore forms a low point, which this deep khor passes close to, called Ras as Sháwarí. About a mile north of it is a village in a date grove, called Bandar M'allim: the shore forms a bay to north eastward of this point, in which native vessels anchor, having shoal water outside them. This place is called Bandar Hamírán; the shoal lies $1\frac{1}{2}$ miles off shore, and has four fathoms inside it, in which the boats lie, the deep khor being just outside the bank. It is chiefly used for laying baghalahs up in, there being no village there.

DIRECTIONS for entering and leaving Basídúh roads.—In the morning a vessel will generally have to work in, often against a fresh land wind: in the afternoon the sea breeze generally blows about S.W.

* E. I. C. sloop of war *Elphinstone*, June 1831, working out of Basídúh, when standing W.N.W., towards Búza, deepened her water near the shore, the helm was put down in $11\frac{1}{2}$ fathoms, but she missed stays, and grounded in $2\frac{1}{2}$. Standing off again to the southward, had 16 and 17 fathoms in the khor.

A vessel coming from the southward or eastward should stand or work along the edge of the flat, being guided by the lead, which must be kept going quickly, and keep in 10 fathoms till Tumb Island, highest part, bears S.S.E. : by daylight the discoloured water is a good guide. A vessel not drawing more than 12 feet water may stand anywhere over the flat, the bottom being soft. By night she would sight the Tumb, which would be best done by steering to pass a mile or two to northward of it, as it would then not be seen more than 2 to 3 miles, owing to its brown colour and level outline : the soundings are little guide approaching the island, which is deep-to, especially on the north side. The tides run with great strength, at, and between it and the flat ; setting East and West 2 to 3 knots at springs. A stranger had probably best anchor on the edge of the flat, and wait for daylight. It is, as a rule, not advisable to stand between the Tumbs by night, as the tides set strong, East and West, between them.

When the Tumb bears S.S.E., it should be kept on that bearing while in sight, steering a little to either side of N.N.W. according to the tide : the island will be seen 14 to 15 miles, or until the Hummocks on Jezret at Tawilah bear N.E., when you will be well on the flat, in $3\frac{1}{2}$ to 4 fathoms, low water. If you shoal to 3 fathoms, a course more to the westward should be steered, until the water deepens.

Vessels standing over the flat, particularly at night, should keep a good look out for fishing boats * at anchor, near its outer edge.

Grubb's notch, if visible, is a useful mark : by keeping it N.N.W., after the Tumb is out of sight, you will be clear of the western edge of the shoal part of the flat. After shoaling on the edge of the flat, the soundings will be $3\frac{1}{2}$ to 4 fathoms at low water. When the Hummocks bear E. by N., Basídúh point will be sighted, about 8 miles distant, and should bear N.E. ; you may then steer N.E. by N., keeping a good look-out for the beacon, on the Beacon shoal or South bank, which does not show very well till brought clear of the mountains, and is visible 6 miles. When the hummocks bear East, you are clear of the shoal part of the flat, and will have the beacon well in sight. When bearing from E.N.E. to E.S.E., the hummocks do not show well, being nearly in one : the bearing of the highest part of the table-land may be taken.

You then stand or work up the channel between the north and south banks ; the course is about N.E. by N., with the beacon well open on the starboard bow. The south bank is steep-to : and, at 2 and 3 miles to

* The surveying vessel, on one occasion, passed, at night, about a dozen lying at anchor off Lingeh, in 17 to 20 fathoms, with their masts down ; so that even by day they are not seen till close to.

south-westward of the beacon, 10 fathoms, the deepest water in the channel, is very close; so that it is advisable to tack in the deep water in that part, or to haul more to northward, if running in: nearer the beacon there is deep water also at some distance off it, so that here the deep water is not a warning of approach to the danger. At half tide the south bank shows well, either by breakers on it, or, with a sea breeze, by the smooth water inside it. The beacon bearing N.E. will clear this bank: or beacon open to the right of the Khamír mountains, if seen, will keep a vessel in the fair way and clear of the South bank until tolerably near the beacon. If the beacon and western hummock subtend an angle not greater than 77° , as measured by a sextant, you cannot be in danger of running on this shoal; when the angle becomes 83° , you will be quite close to the edge.

You may be guided in your approach to the north bank by the lead, tacking when you shoal the water. Beware, if working in, of standing across the south-west tip of it, towards the main; as, on the opposite tack, you might not have water enough to recross it. A steamer, or sailing vessel running in and out with a fair wind, is apt to find herself unexpectedly on one side or other of the channel, from the tide catching her on either bow.

The beacon may be rounded at any distance, from half a cable, or even less, if a strong in-going tide, and light air, and a vessel should be prepared to anchor immediately after shoaling inside the gut.

Coming from the westward, take a departure from Lingeh, and steer a course for Basídúh point, which should bear, when sighted, from E.N.E. to N.E. by E. If working up from Lingeh, you may stand well over to the Persian shore, till the point is sighted, taking care to tack on deepening your water, which you will do near the shore reef. The tide setting somewhat across the course, renders attention necessary: if an in-going tide, you may get set to north-eastward, between the north bank and the main; or if an out-going tide, to southward, towards the south end of the beacon shoal. Either of these is of common occurrence by night. In other respects the directions above given may be followed.

Inner Passage.—This has hitherto never been used, but there appears to be as much water in it as in the one round the flat. It would save a steamer about $1\frac{1}{2}$ hours, and a sailing vessel perhaps a whole tide, if a strong north-east breeze were blowing. Stand close along the south coast of the island, from opposite the salt hills or Namakdún (page 155), known by their dark colour. The channel is nowhere much more than a mile broad, having the flat on its south side, along the edge of which the lead would be a guide. Stand close past Dustakún point; a cable's length is quite safe; and then haul to W.N.W. till you pass over the tail of the

beacon shoal, probably in $3\frac{1}{2}$ fathoms, low water ; and when you deepen over it, which you will do at once to 6 and 7 fathoms, haul on a wind, if a working breeze, and stand over to the north bank ; and when you shoal on that, tack, and proceed as before directed : you will sight Basídúh point shortly after passing Ras Dustakún. This channel should not be attempted by night, but by day there is no reason why it should not be used.

By Night a stranger, or vessel of large draught, had best anchor on the flat, and wait till daylight. A vessel drawing 16 to 17 feet might go in, particularly on a moonlight night, by feeling her way round the edge of the flat, or, if coming from the westward, by taking a departure from the Lingeh coast, and steering for the point. A fire would be made on the point, in answer to blue lights from the ship, if seen. It would be advisable to keep along the north bank by the lead, till opposite the place, and she should avoid getting on the wrong side of the north bank.

JEZÍRET TUMB, called by English seamen the great Tumb, is 165 feet high, of brown colour, and level outline, and 2 miles across. It is visible 14 to 15 miles, and there is a little peaked hummock near the north-east corner, which shows well from north-westward or south-eastward. There is a large banyan tree on the low ground on the south side, near a well of indifferent water, the only water on the island. It is uninhabited ; at times a few cattle are brought over from the main for pasture, the island being covered with coarse grass and shrubs. There are some wild antelopes on the island.

The Tumb lies 15 miles nearly South of Dustakún point, and is deep-to on the north, east, and west sides, where 20 fathoms are 1 to $1\frac{1}{2}$ miles off. On the south side there is a flat with soundings under 10 fathoms, extending a mile off, outside which it deepens rapidly to 40 fathoms. The north point is probably deep-to, but no soundings have been taken close to it. There is a bank 4 or 5 miles E.N.E. from the island, on which 11 fathoms has been got at night in passing. (E.I.C. ship *Coote*, 1844.)

ANCHORAGE.—The best is on the south side, in 6 or 7 fathoms, opposite the banyan tree. The tides run very strong, East and West, on this side of the island. A vessel might also anchor on the east side, in 10 fathoms, half a mile off shore, where she would be sheltered from the Shemál, but exposed to the Náshí.

CAUTION.—Foul ground extends a short distance off the south-west corner, and at half a mile from the island is a detached sunken rock, with only 7 feet on it, and 5 or 6 fathoms close to all round. From it the extremes of the island bear E. by S. to N.N.E. A vessel should

not come under 15 fathoms, when rounding the south-west point of the island.*

JEZÍRET NÁBIYÚ TUMB, called often by the natives, only Nábiyú, is of triangular shape, one mile long, in a north-west and south-east direction, and three-quarters of a mile broad at the south end. It has a dark hill on its north point, with two little peaks 116 feet high, and visible 12 miles: the south end is about 50 feet high, and level, the space between being a low plain, so that from a distance the island makes in two pieces. It is barren and uninhabited, has no water, and lies W. by S. from the great Tumb, the channel between being 7 miles wide, with soundings of 35 fathoms. The soundings between the island and the flat are 40 to 50 fathoms. It lies 23 miles off the nearest part of the Persian coast, about Lingeh.

Nábiyú Tumb is safe to approach to a quarter of a mile, there being no reef except on the north-east side, where it extends about 2 cables off shore. It is deep-to, and the soundings are no guide, there being 30 to 50 fathoms within a mile. The anchorage is bad, there being little or no shelter in a Shemál, and the tide will swing a vessel stern on to the wind, making her very uneasy: if obliged to anchor, do so on the east side in 12 fathoms, a third of a mile off the island.

DIRECTIONS.—A ship may pass to the southward of these islands, or to the southward of Bú Músa, if working up or down the Gulf, the sea being quite clear; but it is preferable to keep to the northward of them, as she would then be able to anchor on the flat, if the wind fall light, and tide be against her; or if a Shemál set in, would be conveniently near the Persian coast for shelter.

JEZÍRET BÚ MÚSA is an island of square shape, about $2\frac{1}{2}$ miles long, N.N.W. and S.S.E., by $1\frac{3}{4}$ broad; it is mostly low, with a number of isolated, dark, volcanic-looking hills. A little north of the centre a sugar-loaf peak, of dark colour, rises 360 feet above the sea, and is visible 20 miles. The island, which is barren and uninhabited, and has no water, is visited by fishing boats from Sharkeh. It lies S. by W. $\frac{1}{4}$ W. from Nábiyú Tumb, the channel between being 21 miles broad and quite clear, with soundings somewhat irregular from 30 to 55 fathoms: 6 miles North of it is a small 15 fathom bank.

A reef, with rocks above water in places, extends a quarter to half a mile off shore, except at the south-east corner, which is low and sandy. With the great peak bearing W.S.W. there is a detached sunk rock, 4 cables off shore, with 7 fathoms close to it. The anchorage at the island is indifferent, being in deep water; the best is off the south-east corner.

* E. I. C. sloop of war *Clive*, discovered this rock by striking on it, in 1835.

Bú Músa is 32 miles distant from the Arab coast, the soundings being from 25 to 35 fathoms for 10 miles from the island; and thence all under 20 fathoms as far as the coast; being at the commencement of the great pearl bank.

COAST FROM JEZÍRET AT TAWÍLAH TO RAS BOSTÁNEH.

The mountain range continues to the westward from Grubb's Notch (page 166), and, $11\frac{1}{2}$ miles W. $\frac{3}{4}$ N. from it, there is a small peak on the top of the range, elevated 3,900 feet, and conspicuous from the sea; it is called on the chart Lingeh peak. The coast range near Kung has been already described; between it and the detached mass of hills, called Jebel Bostáneh, the land forms a long slope up from the coast, which is sandy, to a height of 200 or 300 feet, ending to the northward in cliffs, between which and the mountains is an extensive low plain, swampy after rain. The tides are strong, 1 to 2 knots, or more, along this coast, especially round the points and on the flat; the stream runs everywhere about 3 hours after high or low water.

KUNG,* a large fishing village, $3\frac{1}{2}$ miles to north-eastward of Lingeh, extends for half a mile along the sandy shore, and is chiefly built of mat huts; it may contain 2,000 to 3,000 inhabitants, who own many boats: much pottery, of a common description, is made here. At the west end of the village is a large, white, ruined building, the old Portuguese factory; and opposite to it a round fort, surrounded by the sea at high water. There is a large date grove, and some round trees behind the village, and much cultivation; a few supplies might be obtained, but not so well as at Lingeh. The landing is bad at low water, as the sandy beach dries off about a quarter of a mile, in ridges, with a foot or two water inside. The anchorage at Kung is in 5 fathoms mud, $1\frac{1}{4}$ miles from the shore, there being a small flat, with $2\frac{1}{2}$ fathoms on its edge, extending a mile off, with $4\frac{1}{2}$ fathoms close to it: this anchorage is sheltered from all winds, except the Saheílí. Just outside the anchorage is a continuation of the gut or khor, already mentioned as lying close to the coast at Ras as Sháwarí, which has here 8 fathoms in it; outside which, at $2\frac{1}{4}$ miles off shore, the water shoals to 5 fathoms on the flat; and the depth gradually decreases to the eastward towards Jezíret at Tawílah, and to the southward gradually deepens to 10 fathoms at 8 miles off.

* This was formerly a very considerable place, as the many mounds and ruins attest; there are remains of considerable hummums (baths), &c. The old factory is in a very tottering state; it is a large square building of several stories, and appears to have been commodious. The fort, or battery, is well built, and has vaulted chambers underneath. This place was occupied by the Portuguese after their expulsion from Hormuz, and even down to the 18th century: close to the westward of the factory is a large excavation, which the Arabs stated to have been a dock.

Between Kung and the point of the hills, $4\frac{1}{2}$ miles to the north-eastward, called Búza, the coast forms a small slight bay, which is all shallow; there are two date groves near its shore.

LINGEH, also pronounced Linjeh or Linyeh, one of the most flourishing towns on the Persian coast, is well built, extending in a narrow strip a mile along the shore, and may contain about 10,000 inhabitants, chiefly of the Joasmí tribe. It has a nice appearance from the sea, having a thick grove of date trees behind it, while the houses are of light colour; it shows best in the forenoon, when the sun shines on the houses. The highest buildings are two towers, a quarter of a mile apart; the western of which is 70 feet high, and may be seen 8 to 9 miles; on the eastern, which is a little lower, and forms part of the Sheikh's house, the flag is shown: there is a detached date plantation on the coast, half way between this place and Kung. The town is partially defended on the land side by an insignificant wall with towers; outside the walls, behind the trees, are many domed water cisterns, some new and very large. A breakwater has been built in front of the town, enclosing a space of about 100 yards, in which boats lie, dry at low water, to repair, &c., and small ones to load and unload. Many baghalahs belong to this port, which trade to India, &c., and they send 50 boats to the pearl fishery. Baghalahs and other boats are built here. Good *water* is obtainable, also cattle, poultry, vegetables, rice, flour, &c.; firewood, but not enough for steam purposes. It is perhaps the best place in the Gulf to get any iron-work made, or repairs executed; but of course the workmanship is very rude. The chief of this place, who pays a tribute to the Persian government, has authority over all the places on the coast between Birket Sifeh, and Bostáneh village, with the islands Serí, Nábiyú Furúr, Tumb, Nábiyú Tumb, and Bú Músa. From this place a foot messenger will reach Bú-shehr in 7 to 14 days, according to the season.

The **ANCHORAGE** is in 5 fathoms, half a mile off shore, the holding-ground good, being clayey bottom: it is sheltered from all winds except the Saheílí, which, as at Kung, sends a heavy sea into the roads; but this wind is always of short duration. Outside the anchorage is a khor, or belt of deeper water, with 7 and 8 fathoms, beyond which you shoal again to $5\frac{1}{2}$, and then deepen to 10 fathoms at 5 miles south of the town.

Kaleh Leshtán* is a hill with a sloping top and precipitous sides,

* The top of this hill is covered with ruins, and has a wall with a gate, also ruinous, built along its edge where accessible: the remains of very many watertanks, or reservoirs, on it, shows it has been an important stronghold. It is of considerable antiquity. Dr. Gemelli Carreri visited it in 1694, and says that then nothing was known of its origin; and it appears, from his description, to have been much in the same state it now is.

about 600 feet high, $4\frac{1}{2}$ miles N. by W. $\frac{1}{2}$ W. from Lingeh : its top shows over the rising land behind that place, from which it is quite detached ; when bearing W. to W.N.W. it is very conspicuous, having a quoin shape.

RAS KHARGUH, or Yesheh point, is low and sandy with rocky beach, 3 miles from Lingeh : from this place the coast runs N.E. $\frac{1}{4}$ E. nearly straight, past Lingeh and Kung. Close to the eastward of it a slight bay is formed, in which, one mile from the point, lies the small village of Yesheh or Jesheh, which may be known by two towers, the western, and larger, a round one : there is a date grove behind the village, and a few dates a little inland from Yesheh point. The inhabitants are of the Joasmí tribe, and are fishermen and cultivators : they may be 100 to 200 men. Good water is easily obtainable. The anchorage would be opposite the place, in 4 fathoms, clay, about half a mile off shore. A small spit extends a cable's length off shore, half way between this place and Lingeh. Ras Kharguh is steep-to, there being 10 fathoms at 2 cables' distance, and 14 just outside that depth : outside this it shoals again to 7 fathoms, and thence deepens to 10 fathoms at 3 miles off ; so that deepening the water is a warning of approach to the low point by night, as on the whole of the coast between Shenás and the point opposite Basídúh. It would nowhere be prudent to shoal on the inshore side of this khor, when standing in towards the coast.

RAS AS SHENÁS, the southermost point of the Persian coast, is low and sandy, and bears S.W. by W. $\frac{3}{4}$ W. 3 miles from Ras Kharguh. Between these points is a deep bay, called Shenás bay, with soundings of 6 fathoms and under, affording good anchorage sheltered from the Shemál : in a Náshí also there is little sea, as it is broken by the Basídúh flat, and Jezíret at Tawíláh. Ras as Shenás is quite free from danger, the soundings shoal gradually from 20 fathoms at 4 miles, to 10 at one mile distance, thence deepening again to 13 close to the point : this is the end of the khor, or singular deepening of the water close to the Persian coast, often mentioned already. The tide runs strong round this and Yesheh points, causing a discoloration of the water, which has the appearance of a spit, although, as stated, the deep water is quite close to them.

The small village of Shenás is three-quarters of a mile from the shore, on the west side of the bay, and is not seen from seaward, owing to a thick grove of date trees to the southward of it ; the inhabitants, 200 to 300 men of the Joasmi tribe, are cultivators and fishermen ; they have a few boats hauled up on Shenás point, which serve to distinguish it, and take quantities of fish there in large seines. The only building visible from

the sea is a white ruined tomb,* on a little rising ground, nearly 2 miles N. by E. of the point, which shows well when the sun shines on it. At the east end of the date grove in front of the village, is a large banyan tree, to the east of which are some low cliffs or broken ground near the shore, extending to within a mile of Yesheh point. At $2\frac{1}{2}$ miles north of the tomb is a hill, 400 feet high, the top of which is quoin-shaped, and conspicuous from the eastward, being seen over the rising ground which slopes up from the coast all along this part.

From Ras as Shenás, Ras Bostáneh bears West, a little northerly, 9 miles, the intermediate coast forming a slight bay: a mile to the westward of the former point are some white sand-hills, about 30 feet high, close to the sea; the rest of the shore is low and sandy, with rocky beach, the ground rising in a gentle slope in all directions to the foot of Jebel Bostáneh.

The soundings between these points are regular, the 10 fathom line being half a mile off Ras Bostáneh, and 2 miles from the coast east of it, deepening thence regularly to 20 fathoms at 4 to 5 miles off, and to 30 at 7 to 8 miles distance. In the bay 3 fathoms are a quarter of a mile off, except for 2 miles west from Shenás point, where the 3 fathom line is three-quarters of a mile off shore: with the south extreme of that point, known by the boats hauled up on it, bearing East, you are clear of this little flat.

In the bay, $3\frac{1}{2}$ miles to westward of Shenás point, and a quarter of a mile from the beach, is a domed white reservoir, which is a good landmark; and, a mile east of this, a grove of date trees, where are four wells of good water † quite near the shore, with a sandy beach for landing which would be available as a watering place. The anchorage would be partly sheltered in a Shemál, and quite so in a Náshí.

RAS BOSTÁNEH is a broad and low point of brown colour; here the coast sweeps round to N.N.W. into Moghú bay: there are three little date trees a third of a mile to westward of it; and 2 miles E. by N. from it is the small village of the same name, which has a round tower in it, and a domed reservoir on the rising ground behind. There is a date grove at this village, and another between it and the point. The inhabitants are chiefly fishermen, of the Marázik tribe. By anchoring quite

* This has been rather a handsome building, with a dome, now fallen in; the inhabitants told us it was destroyed by the Wahebbís in the pirate times. It is the tomb of a Musulman saint called Sheikh Rashid.

† Capt. J. Sawyer, I.N., in July 1830, filled up two vessels here with great ease, the vessels lying within half a mile of the shore.

close, in 4 fathoms off the village, boats bring the point W. by S., and are then partly sheltered from the Shemál, which here blows about West.

JEBEL BOSTÁNEH, called also Jebel al Hetí, is a remarkable isolated mass of dark volcanic hills, about $3\frac{1}{2}$ miles in extent, and one mile from the coast: it is of very irregular outline: the highest part is near the centre, and forms a ridge, visible 45 miles, near the southern end of which is a little peak, which looks like a tower built on the summit, and is conspicuous, particularly from the eastward or westward. This peak is elevated 1,750 feet, and bears N.E. $\frac{1}{4}$ E. $4\frac{3}{4}$ miles from Ras Bostáneh. The nearest part of these hills is 3 miles from that point, and has often been mistaken for it when at a distance, and the low land not in sight. The land slopes in a long gentle slope up to their foot, which is 200 to 300 feet above the sea.

CHAPTER X.

NORTH, OR PERSIAN COAST OF PERSIAN GULF. RAS BOSTÁNEH TO ABÚ-SHEHR.

VARIATION $0^{\circ} 50'$ to $1^{\circ} 15'$, Westerly in 1864.

GENERAL OBSERVATIONS.—The coast is bold, with ranges of mountains along its whole extent, which rise, in parts, close to the sea. There is everywhere deep water near it, and the islands off it, viz., 40 to 50 fathoms. On this part are many towns and villages, at all of which small supplies of cattle and poultry may be obtained. The maritime population of the towns is Arab; the agricultural, Persian, or a mixed race of the two. The coast, with the islands off it, all belongs to the Persian Government, who receive or extort as much tribute as they can get from the chiefs of the principal towns, to whom the internal government of their own districts is entirely left, the whole action of the Persian government being the sending at intervals an officer and party of soldiers, to collect the tribute, and if not paid, troops to enforce the demand. The towns are all similar to those already described, and there are date plantations, and some cultivation at most of them.

To the southward of Ras Bostáneh lie the three islands next described.

JEZÍRET SERÍ* is of triangular shape, $3\frac{1}{3}$ miles long, and $2\frac{1}{3}$ broad at its eastern end. It is low, and has many small detached dark hills, none of which probably exceed 50 feet in height, and is visible 12 miles. The hills, which appear to be chiefly volcanic, have nothing very remarkable about them. Its north-east point bears S. $\frac{1}{2}$ W. westerly, 34 miles from Ras Bostáneh, which is the nearest point of the Persian coast. There are several rocks above water on the north and west sides, of which one, off the north-west corner, is nearly half a mile off shore; also several sunken patches, all within half a mile of the island; the south side has foul ground off it to a distance of half a mile, but the east side, and south-east, low sandy point, are clear of reef, and deep-to; there are 40 fathoms everywhere about a mile off the island, so that the lead is no guide approaching it. There is a small village near the north-east corner, inhabited by about 20 families from Lingeh, who are cultivators, and have

* The *Futtay Mombarack* transport was lost on this island in July 1857; she was running down before a shemál, and the haze was so thick, that the island was not seen till too late to avoid it: this was at 8h. a.m.

some flocks on the island; some fruit and vegetables may be obtained, and perhaps a few cattle.

Serí was formerly well peopled, and there are the remains of a small town, on the site of which the present village stands, and two ruined tombs, the northern of which has a spire. There are the ruins of a village, with a circular tower on a little hill on the east side, and of another about the centre of the south side, where *water* is obtainable from wells; but the landing is bad. The anchorage at this island is very indifferent, being close in, with flat rocky bottom, very bad holding-ground; the least objectionable is on the south side, between the wells and the south-east point, about half a mile off shore in 7 or 8 fathoms, where you would be sheltered from the *shemál* and *náshí*, and if the anchors started, the vessel would drive off the island. There is a clear passage, 41 miles broad, between this island and Sír Abú Neír, with irregular soundings from 45 fathoms, to 19 and 17, approaching the latter island. Between Serí and Bú Músa, the soundings are 40 to 45 fathoms.

JEZÍRET NÁBIYÚ FURÚR, generally called by the Arabs only Nábiyú, or the little, is an islet of circular shape, a little over half a mile across, with a remarkable dark coloured saddle hill on its east side, which is 120 feet high, and visible 14 miles. The rest of the island is low, and has brushwood growing on it; there is no water, and it is uninhabited, being only occasionally visited by fishing boats; the peak is 24 miles S.S.W. of Ras Bostáneh. The anchorage is bad; if obliged to do so, anchor off the south-east corner, in 8 to 10 fathoms, a quarter of a mile off shore; the island is too small to break the sea much, and the tide is strong enough to swing a vessel stern on to the sea. The water is deep all round the island, there being 40 to 45 fathoms 1 to $1\frac{1}{2}$ miles off, so that the lead is no guide.

CAUTION is required in passing the north-west side of this island, as a reef of rocks, partly above water, extends from it more than half a mile. There is also a small reef on the west and south sides, but none off the east side.

The channel, 12 miles wide, between this island and Serí, has 45 to 50 fathoms in it; and between Nábiyú and Furúr, there is a clear channel 8 miles wide, with soundings of 50 fathoms.

JEZÍRET FURÚR is of oval shape, 4 miles long, north and south, by $2\frac{1}{2}$ miles broad; it has low cliffs, 30 to 40 feet high all round, and is covered with dark volcanic hills. The highest of these is a table-topped conical peak, $1\frac{1}{2}$ miles from the north coast, and 465 feet high, which is visible 25 miles, and bears S.S.W. $\frac{1}{2}$ W., 14 miles from Ras Bostáneh. Furúr is uninhabited; at times cattle are brought over from the main to graze, and

it is visited by the Moghú men, to whom the island belongs, to fish, and cut wood, &c., for fuel, there being many small trees or rather shrubs, and much coarse grass after the winter rains. In a ravine, on the east side, are the ruins of a large village, and one or two date trees, with some wells, but little water. There are one or two detached rocks above water on the west side, within a cable's length of the shore; there is no reef off the island in other parts more than half a cable. A boat may land at any of the little sandy bays, which are seen in the gaps in the cliffs. It is quite deep to all round, 40 fathoms being under a quarter of a mile off the cliffs, except, according to Capt. Brucks, on the west side, where there is a rocky flat a mile in extent, with soundings decreasing from 6 fathoms on its edge.

No vessel should anchor here, if it can be avoided; the least objectionable position is off a little sandy beach on the south-east side, but she would have to drop her anchor at 1 to $1\frac{1}{2}$ cables distance off shore, in 15 to 20 fathoms. The tides set strong round this island; and off the south point especially, cause the appearance of a spit extending off the island, when they set against the wind, the water being then also discoloured. Owing to the boldness of the soundings, which would seem to render it impossible to run on it, to its height and dark colour, this island is easy to make or run for at night, or in thick weather, but, with the haze of a summer shemál, there is a possibility of its not being seen till unpleasantly close. It must be remembered that at neither of these islands is the lead any guide.

Capt. Grubb, I.N., of the sloop of war *Ternate*, in 1822 reported a bank of 6 fathoms, with Furúr N. 8° E., distant 2 miles. The *Marie* was steered three times over the assigned position, without finding it; it must either be very small, or else further from the island than that officer estimated.

NAJWEH AL FURÚR is a shoal, dangerous for a large ship, lying between Furúr and the main. It is of rock and sand, the part where the soundings are under 5 fathoms being $1\frac{1}{2}$ miles in extent. Near the middle is a narrow ridge, upwards of a mile long, in a north-north-east and south-south-west direction, on which the soundings are only 3 fathoms, and in one part 15 feet at low water springs. It is steepest on its south side, where 20 fathoms are only half a mile off the shoal part; and a vessel should not approach it to less than that depth. On the east and west sides there are 15 fathoms close to the edge, and 20 at a distance of 2 miles; between it and Ras Bostáneh, the soundings are irregular, 8 to 22 fathoms, with overfalls, and rocky bottom. The tides set strong over the shoal, and between it and the point, causing great discolouration of the

water, with strong rippings; the bottom is visible on the shoalest part in fine weather. It is frequented by fishermen from Bostáneh. The highest peak on Furúr bears from S. $\frac{1}{2}$ W. to S.S.W. from either end of the shoal, and S. by W. $\frac{1}{4}$ W. from the shoalest part: whence also the tower peak on Jebel Bostáneh, or highest part of those hills, bears N.E. $\frac{1}{4}$ E., and the centre of Jebel Taranjí is in one with the west end of the Yarid hills.

The channel between this shoal and Furúr island is $6\frac{1}{2}$ miles wide, and quite clear, with soundings increasing from the shoal to 44 fathoms at a mile north of the island; the passage between it and Ras Bostáneh is 5 miles wide, and also quite clear, but with irregular soundings over rocky bottom.

DIRECTIONS.—A vessel may use, indifferently, either of the above two channels, or the one South of Furúr. By daylight, unless very hazy, there is no difficulty; by night, if coming from the eastward along shore from Lingeh, she might hug the coast as far as Ras Bostáneh, keeping in 10 fathoms, and bearing in mind that the water deepens to 14 fathoms, close to Yesheh and Shenás points; but if coming from the westward, or south-eastward, the channel South of the shoal is preferable. By keeping in soundings of 25 to 30 fathoms, she would pass in about mid-channel; but generally the island shows so well at night, that there would be no risk in steering for it; 20 fathoms would be very close to the south side of the shoal. The tides are strong, setting about East and West, and the stream continues 3 hours after the turn of tide.

TIDES.—The tides are strongest off Bostáneh, but are felt all along the coast, and especially between Kaïs island and the main; the tide hour is $12\frac{3}{4}$ h. at Kaïs island, rise and fall at springs, $7\frac{1}{2}$ feet; the stream sets regularly up and down the coast, and runs three hours after the turn of tide.

MOGHÚ BAY is a large bay immediately to the westward of Ras Bostáneh, and lying between that point and Ras Yarid; it is quite free from danger, and affords good anchorage in all winds except the saheilí; the holding ground is good, being mud, and the water is of moderate depth, being all under 10 fathoms in the bay. The shore is low and sandy, with rocky beach towards Ras Bostáneh, and the land slopes gradually up from it to the foot of Jebel Bostáneh and Jebel Yarid; in the space between those hills, the slope ends 2 or 3 miles from the coast, as behind Lingeh, in precipitous broken ground towards the low plain already described, lying inland of Jebel Bostáneh. In this bay lie the towns of Moghú and Dúán.

RAS YARID, the north-west point of this bay, is a low broad cape, the coast bending round very gradually; it is difficult to fix any exact locality for the name; the south-west extreme bears from Ras Bos-

táneh N.W. by W. $\frac{3}{4}$ W., distant $12\frac{1}{2}$ miles. On this cape stands a rugged mass of volcanic hills of dark colour, called Jebel Yarid, having an elevation of about 1,200 feet, and visible 35 miles. They rise every where within half a mile of the shore, which slopes up to their foot, and have a jagged outline; the general mass being of the same height, they have on the whole, a table-topped form, so that it is difficult to identify any particular peak. From the westward, the north bluff is conspicuous. As they are quite isolated, and occupy a space of only 5 by 4 miles, a bearing of their centre may be taken without much error.

CAUTION.—A flat, with less than 3 fathoms, extends a mile off the south and west sides of this point, with 7 fathoms close to its edge, and 12 fathoms within half a mile; on the south side, as there are 12 and 13 fathoms 4 or 5 miles off, the soundings are not a guide for the distance off; but, when standing towards it, the water will deepen to 16 fathoms before shoaling on its edge. By day, the discolouration of the water indicates approach to it.

MOGHÚ.*—From Ras Yarid, the coast bends round to East and E.N.E., to this town, which lies North, a little easterly, from Furúr peak, and about a mile to the eastward of the foot of the Yarid hills, the eastern slope of which bears from it N.W. by N. Moghú has several round towers, one much larger than the rest; there is a date grove behind, and to the westward of the town; to the eastward there are low sand-hills for about 2 miles. It contains about 200 men of the Marázik tribe, and sends 20 boats to the pearl fishery; the Sheikh of this place has authority over the village of Husíneh.

The anchorage, for a shemál, is opposite the town, and as close in as possible; 4 fathoms being nearly a mile off shore, bottom clay; the shemál blows here at West, so that unless you are close in, the shelter is not good. In 4 fathoms you have the edge of the Yarid flat W.S.W., which breaks the force of the sea, but some swell comes in at S.W., making a vessel roll. The soundings decrease regularly into the anchorage, and the native vessels will be some guide, as they are always as near the shore as they can get. In a saheílí, though there would be much sea, the holding ground is so good, there would be little fear of a vessel driving.

Supplies.—Water may be obtained here, also cattle, and a few vegetables, &c.

* This place was for a short time the station of the I. N. squadron, and some tombs of officers and men are still to be seen about a mile west of it: owing to the jealousy of the Persian government, at any establishment of ours on their coast, it was removed to Basídúh.

DÚÁN is a small village on the coast at the bottom of the bay, and $3\frac{1}{2}$ miles E. by S. of Moghú, the coast forming a slight bay between them. It has a date grove behind, and for some distance on each side of it, and may be known by a small fort, with two white towers, the larger of which is square: they show well against the dark trees behind, especially in the afternoon. Good *water* is obtainable here, which has to be brought about a quarter of a mile, but hardly anything else. It is a poor place, with perhaps 100 men, who send a few boats to the pearl fishery; some cultivation is carried on by people living in a detached little village, at a short distance inland, and it is under the chief of Chárek. The anchorage off this place would be exposed to the shemál, and about a mile off shore. Ten fathoms are here 4 to 5 miles off.

From Dúán the coast runs on an average S.S.E. for $5\frac{3}{4}$ miles to Ras Bostáneh; it is desert, and safe to approach. There is capital shelter from the koss anywhere along this part, but it would be a dangerous anchorage if a shemál followed; if a vessel seeks shelter in this bay against easterly winds, it is recommended to stand so far up towards Moghú, as to be in tolerable shelter if a shemál sets in; or else to anchor with Ras Bostáneh bearing East or E. by S., so as to be able to weigh and stand round that point on the appearance of the shemál.

CHÁREK BAY.—From Ras Yarid the coast sweeps round to the north-westward, for 10 miles to the town of Chárek, and then turns to west-south-westward for 4 miles to Táúneh point, forming a great bay, known as Chárek bay, the soundings in which are regular, and all under 10 fathoms. There is good anchorage off the town of Chárek, sheltered from the prevailing winds, but open to the saheílí. From Jebel Yarid, as far as that town, the coast is low and sandy, and forms a slight bay.

It is safe to approach to a mile, or by the lead, after passing the flat off Ras Yarid. The fishing village of Husíneh stands on this part of the coast, $6\frac{1}{2}$ miles S.E. of Chárek town, which has several towers, and some boats belong to it; the anchorage off it would be quite exposed to the shemál; behind this village the land slopes up to the foot of Yarid hills.

CHÁREK is a small town, the chief of which has under him the coast from this place to Jil'et al 'Abeïd, and the islands Kaïs and Sheikh Sho'aïb: he is independent, except a tribute paid to the Persian government. The town has several towers, and a grove of date trees behind it, over which is seen a small fort, built on a hillock north of the town, 80 to 100 feet high. At $1\frac{1}{4}$ miles West of the town, stands a dark hill 370 feet high, and conspicuous from the south-westward, when it appears quoin-shaped; it is called Jebel Hamar, and is visible 19 miles.*

* Half a mile to south-westward of it is a low, light-coloured table hill, called Jebel Lamba, which has the ruins of a hill fort on it.

A mile to eastward of the town is a creek, formed by a large water course, which here enters the sea, in which most of the boats are hauled up; there is a small detached village on its west bank. The sandy beach in front of the town dries off 2 cables in ridges, making the landing bad at low water. Chárek contains about 1,000 men of the Al'Alí tribe, and sends 100 boats to the pearl fishery; some baghalahs also belong to it, which trade to India. Good *water* is obtainable; firewood and cattle in small quantities, and dear. There is said to be a good road through the mountains into the interior from this place.

The anchorage is in 3 to 4 fathoms, mud, with Táúneh point W. $\frac{1}{2}$ S. town bearing North to N. by E. Some swell is felt here in a shemál, which blows at West, and the closer you are in the better will be the shelter.

ASPECT OF COAST. The range extends, apparently with valleys or gaps in it, from Lingeh peak to W.N.W., passing some distance inland of Chárek.

Jebel Taranjí* is an excellent landmark, conspicuous in every direction when out at sea, and seen from Basídúh, quite round, till bearing about East, when it gets hidden by the range further to westward. It is a round topped, or flattened dome-shaped mountain of light colour, elevated 5,150 feet, and visible 70 to 80 miles; on the summit, near the centre of the south side is a small hummock. This mountain is part of the range above mentioned, which continue from it to the westward for some distance; there is a lower range between it and the sea, which hides this mountain when within 10 or 12 miles of the coast. Jebel Taranjí is 16 miles N.W. by N. from Chárek town. This coast range commences north of Chárek, is of light colour, 2,000 to 3,000 feet high, its foot being about a mile from the coast; it extends to the westward at about that distance from the sea, till past Cherúh: there is a great valley between this and the Taranjí range, said to be well cultivated, and to contain many villages. To the eastward of Chárek, the extensive plain already mentioned, behind Lingeh and Bostáneh, comes down to the sea, and on the north side of it are several detached masses of lower mountains in front of the Lingeh peak range; they are chiefly of dark hills, the great ranges being all of light colour, and may be 1,000 to 2,000 feet high: there is a valley between them and the coast range commencing at Chárek, from which the watercourse described at that place issues, and is probably the pass into the interior. At the western end of the eastern of these masses of hills is a remarkable haycock-shaped hill, about 1,500 feet high, which

* This name is given by the Arabs, on account of its supposed resemblance in shape to a citron; it is said great quantities of salt are found in this mountain.

lies 11 miles N. by E. from Moghú, and is conspicuous from Moghú bay ; it is also visible from Chárek, at the north side of the low lying land.

When far out at sea, a great mountain is seen N. $\frac{1}{2}$ E. from Furúr island, belonging to a back range, probably not less than 40 miles from the coast, and than 9,000 feet high. In clear weather it is seen from the sea, when all the other mountains are out of sight, or at least 100 miles off.

TÁÚNEH village stands on a little point, forming the west extreme of the bay at 4 miles W.S.W. of Chárek. It is an insignificant place, with few date trees, and has a castle on a rocky hillock on the extreme point, 50 to 80 feet high. It contains 50 to 100 men of the Al'Alí tribe. Good *water* is obtainable. The coast between this and Chárek forms two little rocky points, with sandy bays between ; rocky spits extend one-third of a mile off these, and Táúneh points, having 8 and 10 fathoms close to their edge. The plain between the mountains and the sea is less than a mile in width at Táúneh, and decreases to the westward. A small vessel might anchor off this place, under half a mile off shore, with the fort on the point bearing W. by N. and sheltered from the shemál by the spit. From a little point half a mile W. by S. of Táúneh the coast runs W. by N. $12\frac{1}{2}$ miles to Jerzeh ; the mountains come quite close down to the shore, which is deep-to, there being 20 fathoms at about a mile off ; and from 12 it shoals at once to 3 fathoms. The deepest water between this part of the coast and Kaïs island is 26 fathoms.

KAÏS or Gaïs is an island of oval shape, $8\frac{1}{2}$ miles long east and west, by $4\frac{1}{2}$ broad, with a channel, 9 miles wide at the narrowest part, between it and the main, and one of 27 miles between it and Furúr island, from which its centre bears N. W. by W. $\frac{1}{2}$ W. The island is visible 13 to 14 miles, and of even, convex outline, sloping on all sides gradually up towards the interior, which is a level tract about 120 feet above the sea. There are many stunted trees scattered about the island, and several villages with date plantations, on the north side : it is under the Sheikh of Chárek, and sends 50 boats to the pearl fishery. The shores of the island are low, the beach sandy, with rocky points ; its east and west points are of very low cliffs ; it is of light brown colour, and does not show well at night. A reef, nowhere extending a mile off shore, surrounds the island on its north, west, and south sides with deep water within a short distance of its edge.

The north-east point is low and sandy, and has a large village on it, called Máshí, containing about 500 men of the Al'Alí tribe, who are chiefly employed in the pearl fishery. The village, built close to the shore, is of mat huts, excepting two square forts of masonry, a quarter of a mile from

the point, and a round tower, a mile south of the point. It extends upwards of a mile along the sandy shore of a bay formed between the north-east and east points; and the pearl boats, when not at work, are hauled up on the beach in front of the houses. There are a few date trees near the wells, quarter of a mile south of the square forts, and several banyan trees near the round tower. Good *water* is procurable here, also cattle, vegetables, &c.

The east point, of cliff about 6 feet high, bears S.E. by S. $\frac{1}{4}$ S. nearly 3 miles from Máshí point, and there is a smaller rocky point, at the end of the sandy shore, 1 mile N.W. of it: from the east point the coast runs South for a short distance, bending round gradually to West and N.W. to the west point: there are one or two small date clumps on this side of the island, but no village.

From Máshí point the north coast of the island has an average direction of W. by N. for 4 miles, forming a succession of sandy bights, with little rocky points, to the north point, which is of cliffs about 15 feet high: at $1\frac{1}{4}$ miles from the north-east point is a small village, called Díh, with several date plantations and some gardens, and half way between this and the north point, are the ruins of an ancient Mohammedan town called Haríra,* extending for three quarters of a mile along the shore.

From the north point the coast of the island turns to W.S.W., and S.W. by W. for $3\frac{1}{2}$ miles, to the west, rocky point, which is only a few feet above the sea. Three quarters of a mile W.S.W. of the north point, is a small village in a date grove, called Safil, which has a round tower at each end. It contains about 200 men, who are fishermen and cultivators. Landing is bad at low water, owing to the reef, which dries off 2 or 3 cables. The interior of the island is cultivated in parts, and there are many flocks and herds. Water can be obtained by digging wells,

* Of this city, which flourished in the 12th century, and was the great depôt of trade with India and China, before Hormuz rose into importance, none of the buildings remain standing; it is a heap of mounds, with tottering masses of masonry here and there; the ruins of a minaret of well cut stone, close to which are many fallen pillars, part of the mosque to which the minaret belonged, are the only architectural remains. Great quantities of broken pottery, some of a fine quality, are found scattered among the debris. A quarter of a mile south of the town are several ruined water reservoirs of large size, one of which measured 120 feet by 24, and was still 24 feet deep; although much rubbish, with the arched roof had fallen in: another was 145 feet long; they were faced with masonry inside, and had been well coated with cement. From these a *kanât*, or subterranean reservoir, a quarter of a mile in length, led to the town; it is about 20 feet below the level of the ground, has small shafts every 20 yards, and four entrances, consisting of flights of steps cut in the rock leading down to the bottom through an arched door, also cut in the rock. It is much choked up and contains no water at present.

almost anywhere on the shore, but it would be probably brackish after a long drought.

Máshí bay is clear of reef at its northern end, there being 5 fathoms at 4 cables off shore, deepening regularly to 20 fathoms at 2 miles off; a small spit extends half a mile N.N.E. of Máshí point, but it has not less than 3 fathoms on it, till within a cable of the shore. Off the pitch of this spit 20 fathoms are within a mile of the point: the tide running over this, causes the water to break, and gives it the appearance of a danger. The southern part of Máshí bay has foul ground extending two thirds of a mile off shore, in a northerly direction from the east point. The south-east corner is clear of reef, and has 20 fathoms about a mile off. Foul ground extends off the south and west side about half a mile, with 6 and 8 fathoms close to its edge, thence deepening rapidly. On the north side, a reef commences opposite Díh village, with 2 fathoms on its edge, widening to the westward; off Safíl it is two thirds of a mile off shore, and between that place and the west point nearly 1 mile in extent. 20 fathoms are two miles off shore opposite Haríra, and to the north-westward of the island, about 3 miles off; from this depth it shoals quickly to 13.

ANCHORAGE.—The best anchorage is off Máshí point: in the summer, when easterly winds are not experienced, a vessel should anchor in 6 to 8 fathoms, mud, in Máshí bay, with the square forts bearing W. by S., which anchorage is quite sheltered against the shemál: but in winter, if an easterly gale comes on, she would have to ride it out in a heavy sea.* In the winter, therefore, a vessel had better anchor in 10 fathoms, mud, with Máshí forts bearing South, about half a mile off shore, when she would be partly sheltered from the shemál, which here blows West to W. by N., by the reef off Haríra, and would be able to weigh, if an easterly gale came on. The anchorage off Haríra, open to the prevailing winds, is in 8 fathoms, $1\frac{1}{2}$ miles off shore.

DIRECTIONS.—As the island is difficult to see at night,† great caution is required while passing it outside, 40 fathoms being within 3 miles. On the north side, the lead is a better guide, but must be kept going quickly. The greatest depth in the strait is 36 fathoms, about mid-channel: if

* E. I. C. sloop of war *Clive*, riding out one of these náshís, in company with the surveying brig *Euphrates*, in January 1858, parted her two bower cables. In February, 1820, the expeditionary fleet, consisting of 7 men of war and 14 transports, was caught in one of these gales at this anchorage, and the *Mercury* cruiser parted one bower cable, and two strands of another; the damage sustained by the other ships is not known.

† E. I. C. schooner *Emily* was lost by running on the west point of this island at night, in 1845; the ship *Ambassador*, was lost on the beach in Máshí Bay, in December 1857, when running before an easterly gale on a dark night.

working through, you must tack on the main by the eye, as the deep water is carried close in to the shore, which is clear of danger; on the island side, you may tack in 12 or 13 fathoms. It is not recommended to pass through the strait by night, unless the island can be seen.

TIDES.—It is high water, full and change, at Máshí at 12h. 45m.; rise and fall $7\frac{1}{2}$ feet. The tides set strong through the straits, but are very weak in the deep water outside the island.

JERZEH is a small village on the main, with a tower and date grove, barely visible from the north-east point of Kaïs, from which it bears N. by W. $\frac{1}{2}$ W. $11\frac{1}{4}$ miles. It is situated in a bay, which affords shelter from the shemál close in; a low point projecting to west-south-westward, between this place and Jil'et al Abeïd; the coast on both sides of Jerzeh is deep-to, having 20 fathoms within a mile of the beach.

JIL'ET AL ABEÏD* is a village on the coast, $8\frac{1}{2}$ miles East of Cherúh, with a large fort on a hill, quarter of a mile inland of the town: a round tower at the west end of the fort† is 250 feet above the sea. The village contains about 150 men of the Beni Ahmad tribe, all fishermen; there are a few date trees to the east of the town. *Water* is obtainable from wells, and reservoirs at this place.‡ The anchorage, if close in, in 4 or 5 fathoms sand, is sheltered from the shemál, the extreme of land to the westward, bearing about W. by S., and partly also from the náshí. In 8 fathoms, three-quarters of a mile off, there would be only partial shelter. Between this place and Cherúh there is a small range of hills, about 200 feet high, the base of which is washed by the sea, in front of the great mountains; the coast line also projects slightly between these places. About 3 miles West of Jil'et al Abeïd is a small spit extending half a mile off shore.

CHERÚH is a small town, with a fort and large date grove, situated in a fine bay formed by a projecting low sandy point. It contains about 200 men, of the Abaidil tribe, chiefly fishermen, and stands on the shore of the bay, one mile N.N.E. of Cherúh point. The Sheikh of this place, who has under him the island of Hinderábí, is subordinate to the chief of a town some distance inland. A few cattle might be obtained here, and *water* in small quantities.

Cherúh point, a very low and broad point, projecting considerably from the line of coast, lies 30 miles W. $\frac{1}{4}$ S. of Chárek town. On its east side

* Called Kal'at by the Persians.

† There are the ruins of a more extensive fortification, and some water reservoirs, outside the present walls.

‡ The hills behind the town produce much salt, and may be seen from a ship at sea streaked with white; fine crystals of salt may be obtained here.

the coast runs to North and N.E. for $1\frac{1}{2}$ miles, forming Cherúh bay, which is a capital anchorage, and easy of access in a shemál, but exposed to easterly winds: it is quite clear of danger, with soundings under 10 fathoms: a vessel should anchor in 8 or 9 fathoms, opposite the village. The south side of this point is deep-to, having 20 fathoms at about 1 mile's distance.

SAMBERRÚN, a small rocky bank so called, lies S. $\frac{1}{2}$ E. $7\frac{1}{2}$ miles from Cherúh point. It has 6 fathoms on it; there are 30 fathoms all round at 1 to 2 miles distance.

CHERÚH to RAS NÁBEND.—The coast continues high, with deep water close-in. It is free from danger, and has the islands Sheikh Sho'aib and Hinderábí lying off it. The projecting part for about 30 miles below Ras Nábend is called 'Usbán. The mountains are all of light colour. The tide hour is only approximately known, it ranges probably between 1 and 4 hours. The stream is strongly felt in the straits between the islands and the main, but is weak in the deep water outside them, and opposite Ras Nábend.

HINDERABÍ ISLAND is rather over 4 miles in length, east and west, by 2 in breadth: it is similar in appearance to Kaís, rising gradually from the sides to the centre, which is flat, and about 100 feet above the sea; the island is of brown colour, and visible 9 miles. There is a large banyan tree on its south-east coast; the east and west points are of low cliff: the former is $3\frac{1}{2}$ miles W.S.W. of Cherúh point. There is a small walled village on its north coast, $2\frac{3}{4}$ miles from the east point, containing about 150 men, and near it are a few date and other trees, with some cultivation. There is water in wells, but it is brackish in summer. The inhabitants are fishermen and cultivators, and have some flocks on the island. It is surrounded by a reef, which, on the north side, extends a quarter of a mile off, and the landing at the village is bad at low water, in consequence: off the north-east and east sides, it is a little more extensive, and deep-to. The reef on the south side has not been explored; it probably extends at least a mile off, and is very steep-to, having 30 fathoms close to outside.* Off the west point there are some detached patches, to a distance of about half a mile, outside which is a flat, extending 2 or 3 miles off, with 9 to 6 fathoms on it, and deep water close to its edge. A vessel might anchor off the village in 6 or 7 fathoms, rocky bottom, but this would be exposed to the shemál: in an easterly breeze it is said there is not much sea at this anchorage. In a breeze, the strength

* E. I. C. sloop of war *Elphinstone*, 25th January 1835, tacked about a mile off the south side of Hinderábí, and after standing off a short distance, touched the bottom.

of the stream would render a vessel uneasy on the weather tide. There are 45 fathoms about 3 miles off the south side.

The COAST from Cherúh point runs nearly straight N.W. by W. for 14 miles, to Nakhílúh point. The Cherúh ranges of hills, which decrease in height, and end at the latter point, rise close to the sea along this part of the coast. There is a table-topped hummock, on the second range of hills, $7\frac{1}{4}$ miles N.N.W. $\frac{1}{2}$ W. from Cherúh point, and 3 miles inland, which is rather remarkable from the southward, and 700 or 800 feet high.

A shallow flat of sand extends $1\frac{1}{4}$ miles W.S.W. from Cherúh point, with 6 fathoms on its outer edge; it shoals thence regularly, so that a vessel may borrow on it, with the lead going quickly; the water will shoal at a cast from 16 to 6 fathoms on its edge, but it is not dangerous, as under that depth it shoals gradually; by day, the discoloured water defines its edge very plainly. The clear passage between this and the reef off the east point of Hinderábí, is only a mile broad, with 20 fathoms in it. The western entrance of this strait is 4 miles wide, and quite clear, with soundings of 16 fathoms and under. The tide sets strong through the narrow part, causing broken water on the edge of the flat, when setting against the wind. Native vessels anchor on this flat, close to the westward of Cherúh point, where there is indifferent shelter in easterly winds; this anchorage is called Bandar Mansúrí.

Mechahí, a small village on the coast, 12 miles to north-westward of Cherúh point, is under Jil'et al Abeid.

Jezzeh, a small village, nearly a mile to north-westward of Mechahí, is under Nakhílúh: both these hamlets have towers, and a few trees near them: the inhabitants are fishermen. The anchorage off them would be open to the prevailing winds; the depths are 20 fathoms at 2 miles off shore, thence decreasing, apparently regularly, to the coast.

NAKHÍLÚH POINT, which has high sand-hills just to northward of it, is a broad point, at which the coast changes its direction to N. $\frac{1}{2}$ W. for 8 miles, forming the east side of a large bay. The ranges of mountains, extending along shore all the way from Chárek, end here in low hills, a short distance from the sea: the east side of the bay is low, being opposite the mouth of the great valley, already mentioned, behind the Cherúh coast range. This point is safe to approach by the lead; 10 fathoms are about one mile off shore, the water deepening to 20 fathoms in mid-channel of the strait between this point and Shitwár.

NAKHÍLÚH, or Nakhílah, a small town in the bay, 3 miles to northward of the point, has a fort with a tower at each end, and a large grove of date and other trees. It contains 200 to 300 men of the Joasmí tribe; with its dependency, the large island of Sheikh Sho'aib,

this place has lately come by marriage under the rule of the Sheikh of Chárek. The anchorage off this town, as anywhere on the east side of this bay, is well sheltered in easterly winds, but open to the shemál.*

MAGÁM, a small village with a few trees, is situated near the bottom of the bay, $4\frac{1}{2}$ miles to northward of Nakhílúh. The soundings off both these places appear to be regular, and there is no danger on the coast, which runs nearly straight from Magám as far as Nakhílúh point.

BANDAR BISETÍN is the name given to that part of the bay to the north-westward of Magám; the coast from which place bends round gradually, forming a little point, which is the west extreme of the bay, at $5\frac{1}{2}$ miles W. by N. from it. It is low, and projects from the rocky hills, which come close to the sea to the west of it; there are some water cisterns near this point, and a small spit extends half a mile off it. Vessels can anchor about half a mile to the eastward of it, sheltered from the shemál, and other prevailing winds. Small vessels anchoring close in, might bring this point about West. Ten fathoms are a mile off it, and the anchorage would be as close in as possible, in order to obtain the best shelter in a shemál, which here blows W. by N. to W.N.W.

From Bisetín the coast runs W. by N. $\frac{3}{4}$ N. for 33 miles, nearly straight, thence trending to N.W. $\frac{1}{4}$ N. for 17 miles to Ras Ná bend.

Mountains.—The great range, on which Jebel Taranjí stands, stretching in a westerly direction, approaches the sea near Magám, forming the north side of the great valley behind Nakhílúh; it continues along the coast, decreasing in height, and ends at Ras Ná bend in low hills. At 8 miles N.E. $\frac{1}{2}$ N. of Nakhílúh is a notch or fall on the summit, the only part at all remarkable. Behind this coast range are seen the tops of a second range, running parallel to the coast, at about 12 miles inland; they are 4,000 to 5,000 feet high, and there is another great valley between it and the coast range.

SHEIKH SHO'AÏB,† a long island, lying nearly parallel to the coast, extends 13 miles in a W. by N. and E. by S. direction, its greatest width being only $2\frac{1}{2}$ miles. It is of brown colour, and level outline, similar in appearance to Kaïs, rising gradually to a height of 120 feet in the centre, the east and west points being low plains for 1 to 2 miles from the extreme ends. It has one large round tree on the summit, $5\frac{1}{2}$ miles from the west end, conspicuous, except when close to the island; and a second, on a

* In maps of Persia, the mouth of a river, to which the name of Darabín river is given, is shown in this bay; there is doubtless a large watercourse draining the valley, but the position of its mouth is not determined.

† Commonly called by the Arabs Jezíret as Sheikh.

small bluff at the end of the high part, $2\frac{1}{2}$ miles S.E. by E. of the west point. This island has 10 little villages on it, which are mentioned below; the inhabitants are fishermen, and some cultivation is carried on; they also send 25 boats to the pearl fishery: the whole population is about 500 men. Small supplies of cattle, vegetables, and fruit may be obtained at the principal villages: water uncertain.

Shitwár, a small island lying off the east end of Sheikh Sho'aib on an E. by S. bearing, is one mile long east and west, and half a mile broad, the strait dividing them being three quarters of a mile wide. Shitwár has small sandhills, and is overgrown with brushwood, but is quite barren; there are some ruined water cisterns near its east end: its centre bears N.W. by W. $\frac{1}{4}$ W. from the centre of Hinderábí.

From the south-east point of Sheikh Sho'aib, which is of cliff, about 20 feet high, the south coast runs W. $\frac{1}{2}$ S. $4\frac{3}{4}$ miles to the village of Gorát, which stands on the southernmost part of the island; it has a tower and large grove of date and other trees, and contains about 100 men. There are 8 or 9 large round trees on the shore just to eastward of it. Gorát point is sandy, to the east of it is a small bay, and, at $1\frac{1}{2}$ miles from the east end, a point of low cliff. To the westward of Gorát the coast is nearly all rocky cliff, and trends gradually to W.N.W. and N.W. by W. to the west point, which is rocky, and 6 to 10 feet above the sea. One mile east of this point is the hamlet of Ras, with a round tower, and a few trees, containing about 40 men; and a mile south of Ras is another small place called Helle. From the west point, the coast, all of low cliff, runs to E. by N. and East for 2 miles, at which point there is a small bight, affording good landing for boats; it then turns to E. by S. and E.S.E. to the east point. The north coast is all of cliff, with one or two little sandy bights; at 4 miles from the north-east point is a small village, with a tower, called Lazah; and one mile west of this, another called Dakú, without any trees at either, and containing each 30 to 40 men. At the former of these places the coast projects, forming a slight bay to the westward of it.

Laz, the principal village on the island, stands on a small rocky point, nearly a mile from the east end; it has a high square tower, and contains about 150 men; there are many large round trees and a few dates, in some cultivated land between this place and the south coast.* The east point is a low sandy spit, a third of a mile N.N.E. of the south-east point.

In the centre of the island is a valley running about 5 miles east and

* At the authors' last visit to this place, the Sheikh of Kongún, with his followers, who had been expelled from his dominions by the Deshti chief, had taken refuge in this island, which greatly increased the population temporarily.

west, which is well cultivated in parts, with many trees, and containing the following villages, which have each from 30 to 50 men. Kofali, at the west end, nearly behind the large tree on the bluff, Gúseh, Al Hende, and Dahríz. None of these are visible from the sea.

The island is quite free from danger beyond 2 or 3 cables; off the west end a flat extends for a mile, with 4 to 6 fathoms on it, deepening to 10 about 3 miles W.N.W. of the island; on either side of this, 30 fathoms are close to: the south side is clear of reef to about a cable, and 40 fathoms are only a mile off. The north side has a small reef all along it, from 1 to 2 cables off shore, thence deepening quickly to 18 at about a mile off. Two miles west of Laz village, a spit runs off about a quarter of a mile, and off that village the flat extends about $1\frac{1}{2}$ cables; 20 fathoms being 2 miles off shore. A narrow spit runs to north-eastward from the low east point, having 2 fathoms on it, for half a mile from the shore; thence deepening off gradually. The straits of Shitwár are clear, with 3 to $3\frac{1}{2}$ fathoms in them. Shitwár has small spits off its points, nowhere more than $1\frac{1}{2}$ cables in extent; 20 fathoms are about $1\frac{1}{2}$ miles off it to the eastward. From Gorát to the east end, the reef extends about 2 cables off, outside which the water deepens to 30 fathoms at 2 miles distance.

ANCHORAGE.—In south-easterly winds vessels might anchor off Ras village in 8 fathoms sand, half a mile off shore, and well sheltered, but would have to weigh on the approach of a shemál, which blows about W.N.W.; there is no shelter from this wind anywhere on the north coast, west of Laz; at which place, by anchoring in 4 fathoms close in, she would be partly sheltered by the point and spit to the westward of that place, and would be partially, at least, sheltered from south-easters by Shitwár island. On the south side, there is, practically, no anchorage west of Gorát; from that place, as far as Shitwár, is excellent shelter in a shemál, in 8 fathoms, quarter to half a mile off shore; this is, however, quite exposed to the south-easter in winter. For a vessel not drawing more than 13 feet, Shitwár strait is a good anchorage; it is easiest entered from the south side; anchor in 3 fathoms, sand and rock, rather over on the western side, with Laz tower seen over the low east point; this anchorage is quite sheltered from the shemál, and tolerably so from easterly winds.

The strait between this island and the main is 12 miles broad, except between Nakhílúh point and the east end, and quite clear of danger. The tide is felt all across the strait, and sets strong between the two islands, causing a ripple on the spit off the east point; it is also felt near the south coast of the island. The deepest water in the strait, which varies from 18 and 20 fathoms to 25 fathoms at the east end, is at about 3 miles from the

island, and thence decreases regularly towards it; soundings of 15 to 18 fathoms being carried quite across till about 2 miles from the main land.

DIRECTIONS.—This island and Hinderábí, owing to their level outline and brown colour, are exceedingly difficult to see by night, or in hazy weather; the water near Sheikh Sho'aib is very clear, the bottom has been seen in 6 fathoms by the authors very distinctly. The lead is of little use, approaching the island from seaward, especially west of Gorát; in the straits, a vessel working through may tack half a mile off the island, or by the lead, if kept going quickly, in 10 fathoms; on the main also, the lead is a guide only if going quickly; as 15 fathoms are under $1\frac{1}{2}$ miles off shore in places, she should not come under 12 fathoms. Off Nakhílúh point the soundings are bolder, and it is recommended not to come under 15 fathoms.

The SHAH ALLUM SHOAL.* least water 15 feet, is a dangerous patch in the middle of the gulf, nearly equidistant from the islands Sheikh Sho'aib and Hálúl, and from the Persian coast below Ras Nábend. Its shoalest part bears S. W. by W. 43 miles from the west end of Sheikh Sho'aib island. The whole extent of the shoal with soundings of less than 20 fathoms, is under $2\frac{1}{2}$ miles north and south by 2 broad; the dangerous part, at the north end, is only one-third of a mile across; the soundings on this part are 4 and 5 fathoms, but one rock has only 15 feet on it at low springs; bottom masses of rock. It is steep-to all round, having 37 to 45 fathoms about a mile off. This shoal does not cause any discolouration of the water, and is not seen from aloft till on it, when the bottom is seen in 7 fathoms; small white birds are generally hovering over it. The high land of the Persian coast between Nakhílúh and 'Aslúh is seen from it in clear weather, but is nearly *down* when on the shoal, so that if the mountains were high up above the horizon, a vessel could not be near this danger. Jebel Serí Yefál bears from it N. $\frac{1}{2}$ E. Twenty miles North of the Shah Allum is a small bank with not less than 17 fathoms on it, bottom sand and shells, and $2\frac{1}{2}$ miles in diameter.

SHÍWÚ is a village on the coast, North, a little westerly, from the west point of Sheikh Sho'aib, and 14 miles N.W. by W. $\frac{1}{2}$ W. from the west point of Bandar Bisetín. It has a fort and high tower on a little hill behind the village, about 120 feet high, and there are three large Banyan

* So named from the ship *Shah Allum*, which vessel was in $3\frac{1}{2}$ fathoms on it in April 1857, and from her commander was obtained some idea of its position. In September 1858 the *Flatworth* struck on it, just after her commander had observed the sun's mer. alt., and from him we obtained its position nearly. The *Cawdee Bux* was on it in 1763 (Dalrymple's Nautic. Memoirs), and the E.I.C.S. *Mercury* sounded on it in 1817 (Log book). It is laid down on our chart for the first time.

trees among the houses; the highest tower on the hill behind it is visible 14 miles. Half a mile to south-eastward of the village is a peaked hill 200 to 300 feet high, on a little coast ridge; behind which is a small valley, running parallel to the coast, at the foot of the mountains, which are here about a mile from the shore. The village contains now only about 100 men, but was formerly more considerable, as most of the houses are deserted. Cattle can be obtained here, and *water* of good quality from wells close to the beach, at the west end of the village, but not in very large quantities, and only in your own casks. A large, flat, black rock, projecting in front of the village, forms a small boat harbour, where the best landing place is, and the few boats belonging to the village are hauled up. To the west of this the shore forms a sandy bay, a mile in breadth, but shallow, in which, $4\frac{1}{2}$ cables W.N.W. of the flat rock, is a small rock above water.

From this place the coast runs nearly straight to the west point of Bandar Bisetín; with a small ridge of precipitous hills, 200 to 300 feet high, close to the sea, nearly continuous; and, as at Shíwú, separated from the great range by a narrow valley. At $2\frac{1}{2}$ miles E. by S. $\frac{3}{4}$ S. of Shíwú is a rather remarkable saddle hill on this coast ridge, about 400 feet high.

The anchorage off Shíwú is tolerably sheltered in a *shemál*, if close in, but there would be considerable swell: anchor in 5 fathoms, opposite the black rock, about quarter of a mile off shore; bottom, sand. At one mile off shore the depth is 15 fathoms.

At $2\frac{1}{8}$ miles W. by N. $\frac{3}{4}$ N. of Shíwú is a rocky point, with hills coming close down to it; to the eastward of which is a bay called Bandar Kellátú, which affords good shelter to small native vessels in a *shemál*, as they can bring the point about W.S.W. There is better shelter for a ship here than at Shíwú, by anchoring about a quarter of a mile off the point, and as far into the bay as possible.

From Shíwú the coast has an average direction of W. by N. $\frac{1}{2}$ N. for 19 miles: it is all deep-to, with hills rising everywhere close to the sea-coast, which is mostly cliff, with little sandy bays. Along this part are many boat anchorages sheltered from the *shemál*, to the westward of Bandar Kellátú, each of which has a name; they are quite close to the shore, the depths off it being 25 fathoms at about a mile.

Sháhín Káh is a remarkable long, flat topped hill, with precipitous sides, and sloping on top slightly to the northward; its southern bluff is elevated 1,100 feet: it is visible 30 miles, and is 8 miles to the west-north-westward of Shíwú, and about a mile from the coast.

RÁS NÁBEND is a broad projecting cape, having on its north side an extensive bay. The extreme is rocky cliff, about 10 feet high, the

land rising gradually from it to the south-eastward. Half a mile inland of it is a large date grove, and at 3 miles S.E. $\frac{1}{2}$ E. from the extreme point, is a single tree on some high table land, conspicuous from seaward. From this point the coast has a direction about S.E. $\frac{1}{4}$ E. for 17 miles, and is bold and rocky, with low cliffs, and no anchorage; it then trends to E. by S $\frac{1}{2}$ S. towards Shíwú: there is no village on the coast between Ras Ná bend and Shíwú.

The soundings off the cape are 30 fathoms at three miles distance, thence decreasing regularly; there is no reef at the extreme point, or off the coast below it as far as Sháhín Kúh, beyond a cable's length.

The tide stream is hardly perceptible off Ras Ná bend, or as far as Shíwú to the southward, and to the northward until near Ras Mutáf. In Ná bend bay a slight tide stream is experienced which appears to set round the bay.

ASPECT of the COAST.—The coast from Rás Ná bend to Kongún is clear of danger, and deep-to; there is a range of mountains close to the shore along the whole extent, running in a N.W. and S.E. direction, the south face of which appears quite precipitous: fires are sometimes seen high up these mountains by night, which are made by charcoal burners. On the north side of Ná bend bay, the foot of the great mountains is 2 miles from the shore; it is a continuation of the range lying north of the valley behind that part of the coast called 'Usbán.

Sirí Yefál* is a well known landmark on the summit of this range of mountains. It is 5 miles from the coast above 'Aslúh, and bears N. by E. from Rás Ná bend. It is 4,870 feet high, and shows as a great step or fall on the summit, except from the westward, where it appears like a sharp notch: it is visible over 70 miles. On the same range, 23 miles S.E. $\frac{1}{2}$ E. from it, is a bluff, 3,600 feet high, which is conspicuous from the north-westward.

Jebel Sirí 'Ayenát† is a barn-shaped peak on the summit of the great range, $9\frac{1}{2}$ miles E. by S. of Kongún, and 5 miles from the nearest part of the coast: it is elevated 4,660 feet, and is visible 70 miles. When close in to the coast, Sirí is hidden by a lower range standing between it and the shore, which commences near Barak, and runs along shore past Kongún, increasing in height to the northward; when out at sea, Sirí is a most remarkable landmark. It stands on a long level topped part of the range, which terminates in a great fall or step 17 miles N.W. of this mountain. On an East bearing, Sirí makes in a small peak.

NÁ BEND BAY lies to northward of the cape, and is 4 miles broad by

* Known to English seamen as 'Aslúh Notch.

† Called often only Sirí, and by English seamen Barn Hill.

5 to 6 in depth. The soundings in it are regular, shoaling from 10 fathoms at the entrance: bottom mud. About two miles S. by W. of 'Aslúh town is a small rocky patch with $3\frac{1}{2}$ fathoms least water on it, which is steep-to, and does not show well.

From Ras Nábend the coast has an E. by N. direction for 3 miles, thence turning to E. by S. for $1\frac{1}{2}$ miles; it then bends round to northward forming the bottom of the bay. About a mile to eastward of the cape are the ruins of a large village called Gussad. A date plantation lines the coast from this position as far as the bottom of the bay.

Nábend, a small town with a round tower, standing on the shore $2\frac{1}{2}$ miles to eastward of the point, contains about 250 men of the Al Haram tribe. Cattle and vegetables may be obtained. A reef extends off the town about half a mile, decreasing in width to 1 or $1\frac{1}{2}$ cables off Ras Nábend; the boats belonging to this place run over the reef, and anchor close to the town, in a little deeper water than that found on the edge of the reef.

Nakhl Hashin is a small village, lately rebuilt, $1\frac{1}{2}$ miles to eastward of Nábend town: owing to the point projecting between these places, which has a reef extending about half a mile off it, boats can anchor here close in, sheltered from the shemál.

Pearls are fished for off Ras Nábend, the only place on the Persian coast where any are found, but none of much value are obtained. The south side of the bay is low and rocky; the land behind sloping up to a height of several hundred feet; the bottom or east end of the bay is a low sandy shore, swampy in parts, at the mouth of the great valley already described as extending far to south-eastward behind the coast range; it is very low and level for many miles from the sea, and the water off it is shallow, 3 fathoms being $1\frac{1}{2}$ to 2 miles distant. A few miles to eastward of the bottom of this bay, is a pass into the interior, said to be easily practicable for artillery.

Bandar Beid Khún.—On the north coast of the bay N. by E. $\frac{1}{2}$ E. from Nábend town, is a small sandy point, with a reef extending a cable off shore, and a small bay to eastward of it, in which small vessels can anchor in a shemál; the coast between this point and the bottom of the bay, which is about 2 miles to the eastward, is low and swampy, and intersected by mangrove creeks. Indifferent water is obtained by digging in the sand on the point. This place is frequented by fishermen from 'Aslúh who take fish here in large seines, and keep a few boats hauled up on the point. At $1\frac{3}{4}$ miles N.E. $\frac{3}{4}$ N. from the point, is the small village of Beid Khún, which lies nearly hidden in a grove of date and other trees: a little stream of fresh water, brought down from a gorge in the mountains in a rude aqueduct, enables the people to carry on a con-

siderable amount of cultivation. A vessel, to be sheltered from the shemál, which blows about W.N.W., would have to anchor in $2\frac{3}{4}$ to $2\frac{1}{2}$ fathoms at low water, with the edge of the little reef off the point about W. $\frac{1}{2}$ N., but considerable swell from the westward is felt in this anchorage, though sheltered from the wind and sea. W.N.W. $1\frac{1}{4}$ miles from the west point of Bandar Beid Khún, the coast forms a low point, which may be considered the entrance of Nábend bay ; close to westward of it, date groves begin, which extend past 'Aslúh town ; there is also a clump of dates, a quarter of a mile to north-eastward. The small bay between these points is clear, but a reef runs a quarter of a mile off this point. Here the coast alters its direction to N.W.

'**Aslúh**, a town on the coast, a mile to north-westward of the point just described, is independent, and contains about 1,000 men of the Al Haram tribe. It is a straggling place, occupying more than half a mile along the shore, with no fortifications visible from seaward, and has a large date grove behind it. Cattle, &c., might be procured here : no large baghalahs belong to the place, but they have many small boats, and take a part in the pearl fishery. A short distance inland of this place are some ruins, consisting chiefly of mounds, but they have not been visited. Opposite the town, a reef extends more than half a mile off shore, with 5 and 6 fathoms close to its edge ; inside this, the water is a little deeper ; small boats run over it, and anchor in shelter close to the town ; but for a ship, the anchorage off the town is quite exposed to the shemál.

DIRECTIONS.—The anchorage anywhere in Nábend bay is sheltered in a koss, but open to the shemál, and the heavy sea which rolls into the bay would render it almost impossible for a vessel to work out against one ; small vessels would get tolerable shelter in Bandar Beid Khún, but a large one, hardly any. The passage is about a mile in width between the $3\frac{1}{2}$ fathoms bank and the 'Aslúh reef, and 2 miles wide between it and the reef off Nábend town ; but this bank is not a danger for any vessels likely to enter the bay. The reef off 'Aslúh should not be approached nearer than 7 fathoms.

NAKHL TAKÍ is a small village on the coast with a fort and round tower, 2 miles N.W. of 'Aslúh. There are some date trees near it, and two or three large round trees between these places. The shore reef here extends about a quarter of a mile off, and should not be approached under 8 fathoms, which would be very close. From this place as far as Túhrí, 20 fathoms are one mile off shore, or even less in places, the water deepening to 30 fathoms at 4 miles off ; the bottom is mud. The soundings between this part of the coast and the edge of the pearl bank are irregular, 30 to 40 and 45 fathoms.

BARAK is a small village and fort with a date grove 13 miles N.W. of Nakhl Takí; the intermediate coast is steep-to, with little or no reef off it, and is nearly straight; there are no villages between these places, and the hills rise close to the sea. Boats are partly sheltered in a *shemál*, off this village, by the projecting point to the westward of it, which forms the east point of Táhrí bay.

TÁHRÍ is a village in a small bay, $3\frac{1}{4}$ miles W.N.W. of Barak; it is built partly on the shore and partly up the side of the nearest range of hills, which are about 700 feet high, and come close down to the sea at the bottom of the bay. It may be known by a square fort on the hill side, about 100 feet above the sea, at the west end of the village; there is a tower, also, on the hills at the east end. It contains 200 to 300 men, all fishermen, and small supplies of cattle and vegetables can be obtained; *water* plentiful and good. The bay is formed by a low point projecting from the line of coast on either side of it, and is 2 miles across; there is an extensive date plantation and some cultivation on the east low point of the bay, and another grove a mile to westward of the town, on the western point. The soundings in the bay are 8 fathoms at half a mile off, thence shoaling regularly; both the points are deep-to and clear of reef. By anchoring close in, in about 6 fathoms, the western point can be brought to bear W. by N., and a vessel would be sheltered in a *shemál*, but there is little or no shelter against the south-easter; the holding ground is good. On a small hill, a mile W.N.W. of Táhrí fort, are seen the ruins of a mosque on a low hill.*

* At this place are the most considerable of the ruins on the coasts of the gulf, as far as is known to Europeans. From the present village for near two miles to the westward, the ground is a mass of mounds and debris of buildings, of much better masonry than anything existing at present; the watercourses are walled in, and two narrow passes through the hills into the interior strongly fortified. At the mosque mentioned above, which is large, and has been a handsome building, are many grave stones, or sarcophagi, elaborately carved, with inscriptions in the Cufic character, also the remains of a Kanát, or subterraneous aqueduct. There are also many dry wells and ruinous reservoirs among the mounds. These are the ruins of an early Mohammedan city of great importance, doubtless the once famous city Siráf; but on the hills behind this are remains of a different character and period, which unquestionably date from the Gabr (Guebre or Gheber) times. The whole hill side, for a space estimated at half a mile square, has been denuded of its superstratum of sand stone, possibly for building purposes, leaving two or three isolated square pillars of rock, 10 to 12 feet high, in one of which, a chamber, 7 by 4 feet, is excavated, and divided into two compartments, evidently graves. The surface of the rock for many hundred feet round these is honeycombed into little cells, varying from 2 to 9 feet long, and 3 to 4 deep, with only thin partitions of the rock left between, and flights of steps, also cut in the rock, leading through them, up the steep hillside, to the wells, of which there are many, sunk to a great depth; one was 204 feet deep, with 36 feet of water in it, quite smoothly cut through the rock, and about $1\frac{1}{2}$ by 3 feet across.

SHILAU is a small village on the coast, about 4 miles to westward of Táhrí. The hills are close to the sea on either side of this place, and there are 20 fathoms within a mile of the shore.* About 2 miles west of this place is a slightly projecting point called Ras Akhter, to the westward of which is a bight where boats can anchor, sheltered by a small point to the westward called Ras al Aswát; both these points are deep-to.

'AYENÁT, a village about 9 miles to the south-eastward of Kongún, has tolerably good anchorage in a shemál in 10 fathoms; a small reef of rocks off the village forms a boat harbour. At 3 miles to westward of it is a small village called Mayalú. The coast between Táhrí and Kongún is deep-to, and safe to approach to half a mile.

KONGÚN was a large town standing at the bottom of the bay to eastward of Ras Mutáf, and 18 miles N.W. by W. from Táhrí. The chief was independent, except of the Persian government, to whom he paid a yearly tribute of about 1,000*l.*; he had under his authority all the towns from Banak to Shíwú, excepting 'Aslúh. Many baghalahs and boats belonged to the town, which was tolerably well built, and had large date plantations and much cultivation. In 1859 it was destroyed by the Deshtí chief, with whom they had been long at feud; the Sheikh and his followers taking refuge on Sheikh Sho'aib: the town, in 1860, was quite abandoned and in ruins. There is good water here in wells. The bay affords shelter from the shemál, but some swell rolls in at W.S.W., the wind blowing at N.W. by W.: about 10 miles farther to the westward, the shelter is complete. There is no shelter whatever from the koss; the anchorage is in 5 fathoms, half to three-quarters of a mile off shore. At the town the beach is sandy, but at Ras al Mára, the low south-east point of Kongún bay, distant 2 miles from the town, rocks extend about a cable's length off shore.

KONGÚN to RAS AL KHÁN.—The coast line between these places projects considerably, and has shoals off it to a distance, in one part, of

In the precipitous faces of the hills around, are many little chambers excavated, mostly inaccessible; some we could get at contained human bones, almost dropping to dust, and had been coated with cement inside; these were doubtless Gabr graves; no inscriptions could be found at any of them. Former writers have supposed Siráf to have been situated on the coast of Láristán opposite Kaïs island, but there are no extensive ruins on that part of the coast: it will appear from the following that this is the site of that town. In Ebn Haukal's *Oriental Geography*, 10th century, translated by Sir W. Ouseley, it is stated that Siráf is on the coast of Fárs, and that fruits, &c. were brought from a mountain on the east of the city called Jem. We were informed at Táhrí that there was at present a town called Jam at one day's journey inland through the mountains, which stood in a fertile district, producing grain, fruit, &c.

* From this to the end of the paragraph is from Capt. Brucks.

8 miles, called Ras Mutáf. The mountain range, on which Jebel Sirí stands, stretches inland to north-westward, having a detached mass of mountains between it and the coast, of which Jebel Dreng is the highest part. The range mentioned at Kongún, between the Sirí range and the sea, is 2,000 to 3,000 feet high; at a distance, it appears to form part of the back range, which, when close in, it rises above and hides; it is rugged and precipitous, with a very irregular outline.*

The great fall in the level-topped range of Jebel Sirí, 17 miles to north-westward of that peak, has been mentioned; at 8 and 11 miles to north-west of this fall are two remarkable castle-shaped mountains with perpendicular sides, and projecting portions, like bastions; and at 23 miles N.W. $\frac{1}{2}$ W. from it, is a round-shaped mountain about 4,000 feet high, which glistens white in streaks, in the sun, from the salt contained in it; from this the range trends to northward towards Kúh Khormúj. A great valley separates these from the mountains next described.

Jebel Dreng, 3,270 feet high, is at the northern end of the detached mountain mass already mentioned, which stands on the projecting part of the coast. Dreng makes in a mass of even height, with 3 to 5 hummocks on the top, according to the bearing; on a N.E. by N. bearing, they are all in one, and it appears as one peak, with a great bluff on the north side. There is an extensive plain to the northward of it. This mountain lies N.N.E. $\frac{1}{4}$ E., easterly, from Umm Kheileh islet, from which the centre hummock is distant $18\frac{1}{2}$ miles; it is visible over 60 miles. The range decreases in height towards the south end; at 14 miles S. by E. $\frac{1}{4}$ E. from the centre of Dreng, is a table hill near the south-west corner of the range, about 800 feet high, with a small natural pillar on it, called Funnel Hill by Capt. Brucks, useful as a mark when near the shoals. The range ends near the coast, about 8 miles to westward of Kongún; this part of the coast is under the Deshtí chief.

DEYYER is a small town on the coast, $7\frac{1}{2}$ miles W. $\frac{1}{4}$ N. from Kongún, the shore between forming a slight bay. It contains 200 to 300 men, and has a fort with two towers, and some round trees near it; to the eastward of it is a large date grove. Water might be obtained here, and a few cattle, &c.; some firewood could be got from the interior, by waiting a few days. The population is chiefly Persian and agricultural. This place lies near the south-east end of Dreng range, and the coast between this and Kongún is low and sandy, being opposite the mouth of the great

* In some of the passes through these mountains, ropes are made use of to surmount the most difficult parts; when these are hauled up, the passes are rendered quite inaccessible. Plaisted visited some hot springs in this range, opposite the town of Berdistán.—(Journal from Calcutta to Basra, &c. 1750.)

valley above mentioned. A small reef extends 1 to 2 cables off at Deyyer, rendering landing difficult, unless the boats can get over it.

There is capital anchorage here in a *shemál*, in 8 to 10 fathoms, half to one mile off shore, with muddy bottom; it is a favourite place of shelter for *baghalahs* during the summer *shemáls*, but in winter it would be quite open to the *koss*. South of this place the water deepens to 27 fathoms at 5 miles distance, afterwards shoaling again to 9 or 10 on the tail of the *Mutáf* shoals.

BERDISTÁN is a town 3 or 4 miles to north-eastward of Deyyer, and about two miles from the coast. It has a tall *Bádghir* and stands near a *khór*, which has its mouth 3 miles east of Deyyer, and in rains becomes a watercourse, draining the valley between *Jebel Dreng* and the great range. *Banak*, a small village 3 or 4 miles to north-westward of *Kongún*, was under the chief of that place, *Berdistán* being under the *Deshtí* chief.

AÜLÍ, called *Danájí* by the Arabs, is a village on the coast, $2\frac{1}{2}$ miles to westward of Deyyer, with about 50 men. It stands on a small rocky point of low cliff, on which is a high round tower visible 10 or 11 miles. There is good water here in springs. At one cable off Tower point lies a small ridge of rocks under water, inside which is a boat harbour, where the best landing is, on a little sandy beach close to eastward of the tower. A vessel may anchor here in 6 or 8 fathoms less than half a mile off shore. The *Dreng* hills come close down to the shore at this place, and for 7 or 8 miles to the westward of it; there are few trees on this part.

BATÚNEH is a small village of about 30 men on the coast, 6 miles west of *Aülí*; there is a small white domed tomb on the hills above it. From this place there appears to be no village near the shore for about 45 miles, or as far as *Láúr*.

The mainland, west of this place, cannot be approached by shipping owing to the extensive shoals off it; it has a westerly direction for about 12 miles, to a point called *Ras Umm al Garm*, whence it runs to N.W. by N. for about 35 miles farther to the village of *Láúr*. It is only approximately delineated, and skirts the west side of the *Dreng* hills; the great plain to the north of those hills is very low and swampy.

UMM AL GARM* is a small low island, less than a mile in extent, lying about a mile off the point called after it. Capt. Brucks states that there is a deep channel or gut, with 10 fathoms in it, between this island and the point. At 3 to 4 miles N.W. of it is another sandy low island

* i.e., the mother of mangroves.

called Umm Síleh. Some date groves on this part of the coast can just be seen, when close in off Umm Kheïleh island.

UMM AN NAKHEÏLAH * commonly called Umm Kheïleh, or Mokheïleh, is a low islet, visible 6 or 7 miles, with two small date trees in the centre, and two-fifths of a mile across, lying 6 miles W. by S. from Ras Umm al Garm, and at the north end of the Ras Mutáf shoals. It is frequented by fishermen from Deyyer.

RAS MUTÁF. †—This great shoal extends to the south-east and eastward for 18 miles from Umm Kheïleh; it appears to be composed of sand, with a rocky foundation, and is almost dry near its outer edge for many miles from that island, deepening gradually towards the tail. Its edge is one-third of a mile outside Umm Kheïleh, or $6\frac{1}{2}$ miles off the main, and to the south-eastward it increases to a distance of 8 miles off. Its south-western edge is the steepest, 10 fathoms being within half a mile of it, but by not coming under 12 fathoms, a vessel would keep about 6 miles clear of it. On the south side it is less steep, shoaling gradually from 10 fathoms, at 2 to 3 miles off; and off the east end or tail, the water deepens off very gradually to 10 fathoms, at a distance of 7 miles from the 3 fathoms line, and thence quickly to 20 and 25 fathoms. Inside the shoal, a deep water channel or khor, runs up between Umm Kheïleh and the main, with 6 and 7 fathoms, and continues for 8 miles beyond that island, but has no outlet. It is called Khor Ayyaz, and is used by small native craft, which leave it by a channel with about 2 fathoms at high water, close to northward of Umm Kheïleh. In-shore of this channel, shoal water extends 2 to 3 miles off shore, with another deep khor, leading up inside Umm al Garm island.

Anchorage.—Vessels can anchor off the tail of this bank, quite sheltered from the shemál, in 4 or 5 fathoms, with Jebel Dreng bearing N.N.W., or open to the right of Funnel hill, and Jebel Sirí, E. by N. $\frac{1}{2}$ N. In the winter, it is not recommended to stand farther in behind the shoal than necessary to obtain shelter, as if a koss came on, the vessel might not be able to get out; the shemál here blows at N.W., so that when the outer edge of the shoal is brought W. by N., the sea is quite lost. As there is no shelter from the shemál for a large vessel between this and Bú-shehr, and it is a convenient and accessible place for anchorage, it may be advantageously resorted to by vessels caught in a N.W. gale near this part.

* This islet is said to have been formerly well planted with dates; on the old Portuguese charts it is called Palmeira. On it is the ruined tomb of a Musulmán Sheikh, or saint, from whom it is sometimes called Sheikh Karámeh.

† Called hitherto by English seamen, the Berdistán bank.

DIRECTIONS.—In working up the gulf, a vessel may stand close into the coast as far as Kongún, where she would get smoother water than outside; but near the tail of the Mutáf shoal, if she stood close in to the shore, she might, on the outshore tack, fetch up inside the shoal, and incur some risk; with Funnel hill N.N.W. $\frac{1}{2}$ W., she would be close to the south-east end. On the south side of the shoal, the soundings are a good guide; or Jebel Sirí, E. by N. $\frac{1}{4}$ N., would be close to the edge. When Funnel hill bears N.N.E. $\frac{1}{2}$ E., you are past the most projecting part, and from this as far as Mokheileh, 10 fathoms are close to the shoal. When Mokheileh island bears N.E., or when all the hummocks on Jebel Dreng are in one, you are to the northward of Ras Mutáf shoal. In rounding the shoal, if a vessel does not come under 11 fathoms by day, or 12 fathoms by night, she will be at a safe distance. By day, the discolouration of the water is a good guide; it extends some miles off the tail of the shoal into deep water. The tides are strong in the channel behind the shoal, and are also felt along its outer edge, setting about parallel with the coast.

At $1\frac{3}{4}$ miles N.W. $\frac{1}{2}$ N. from Mokheileh, is the south point of a thin strip of low sandy shore, with tufts of grass on it, which runs in a N.W. by N. direction for 6 miles to Ras Yebrín or Jebrín. It is called Umm al Gassár, and between it and Mokheileh is the boat channel, already alluded to, which is narrow, and runs close round the north end of the islet; native boats lie at the island till high water, before attempting the passage, which is much blocked up by dry sand-banks, and has not more than 2 fathoms at high water. Inside Umm al Gassár is an extensive swamp intersected by deep khors, the mainland being about 5 miles distant; this swamp continues to the northward, nearly to Láúr.

RAS al KHÁN, the south end of a very low sandy ridge, almost overflowed at high water, is 15 miles N.W. by N. from Mokheileh island; it projects considerably from the line of coast, and is opposite a great valley 10 miles broad, lying to northward of Jebel Dreng, and extending inland for near 20 miles to the great round salt mountain, already described. Inside this point are extensive swamps, with many creeks, the mainland not being in sight from it. In this valley lies the town of Burdekhún, the residence of the Deshtí chief.

The soundings off this point are 10 fathoms at 2 miles distance, and to the northward of it, that depth is found only a mile from the dry sandy ridge; to the southward of the point a small bay is formed, where native boats find indifferent shelter in a shemál, in 2 or $2\frac{1}{2}$ fathoms. Between this point and Mokheileh, 10 fathoms are 2 to 1 miles off the low strip of sand forming the coast, which is clear of danger. The 20 fathoms line is 7 miles off Ras al Khán, and 10 to 12 miles off Ras Mutáf, outside which

it deepens quickly to 30 fathoms. The deepest water in this part of the gulf is 40 fathoms. A vessel should not come under 11 fathoms by day, or 14 by night, as the coast is so low as only to be seen 2 or 3 miles, even in the daytime.

RAS al KHÁN to BÚ-SHEHR.—The shore is clear of danger, the soundings decreasing regularly; it has an average direction of N. by W. $\frac{1}{2}$ W. as far as Bú-shehr peninsula, which projects considerably from the coast. The boundary between the territories of the Deshtí and Tangistání chiefs is opposite the Asses Ears. The tide stream is very weak on this part of the coast, and often quite imperceptible.

A range of mountains near the coast commences 9 miles to northward of Ras al Khán, and runs to northward along it for 40 miles, when it sinks into the plain which lies inland of Bú-shehr. It has a rugged outline; a very remarkable peak on it is the Bú-Reyyál, or Asses Ears, which consists of two pinnacles close together, on the summit of the range, with a third and smaller one on their north side. This peak, which is 2,500 feet high, and visible about 50 miles, is an excellent landmark, and conspicuous when bearing N. by W. to S.E., beyond which bearings it is shut in with the rest of the range. There are other peaks on this range, two of which form a saddle or notch, when seen from Bú-shehr; they are just to northward of Bú-Reyyál.

Kúh Khormúj * is a grand mountain ridge, 6,500 feet high, seen over all the coast ranges until close in to the shore, and to a distance of more than 80 miles. From the westward it makes in a long convex ridge, but when bearing E.S.E., the ridge is seen end on, and it forms a fine peak, with a long rounded slope on the north side. It is 22 miles from the coast just above the Bú Reyyál, and bears from that peak N.E. From Bú-shehr it bears S.E. by E. $\frac{3}{4}$ E., on which bearing its form is particularly remarkable. To the southward of it, the back range has a southeasterly direction, passing inland of the great salt mountain behind Jebel Dreng.

Khor Ziyáret is a small creek, 7 miles to northward of Ras al Khán, entered by small boats at high water; but the mouth is exposed. After rains, a large quantity of fresh water is discharged through it: its banks at the mouth are low. The swampy coast, which extends from Mokheileh island, ends a little above this: and the Bú Reyyál hills come close down to the sea.

Láúr is a small village and fort on the coast, 17 miles to northward of Ras al Khán. Kogán is a similar village a mile to northward of Láúr; there are large date groves at these villages, and much cultivation.

* So called from the town of that name near its foot.

Bárakí is a small village with a tower, on the coast West of Bú Reyyál; there are a few date trees here, and some cultivation on the narrow plain between the hills and the sea. It contains about 100 men, chiefly cultivators. A little to the southward of this place is a position called Sámán, or the boundary, being the junction of Deshtistán with Tangistán. A mile to northward of Bárakí is a small fort and village.

The coast between this place and Ras al Khán is quite safe to approach by the lead; it is sandy, with little rocky points, and there is no shore reef beyond a cable's length off it; the plain between the hills and the sea is from 1 to 2 miles wide. Ten fathoms are 4 miles off shore at Bárakí, and 2 miles off, just north of Ras al Khán, the 20 fathoms line being from 11 to 14 miles off shore as far as Bú-shehr; the deepest water in this part of the gulf being from 30 to 35 fathoms.

From Bárakí the coast runs N. by W. for 20 miles, to the bottom of Halíleh bay; at 6 miles to northward of it is a single tree on a little cliff, rather conspicuous from seaward, and 2 miles north of this tree, are some low cliffs extending some distance along the coast.

Báshí is a village with a large round tower, and date grove, 11 miles to northward of Bárakí. Here the Bú Reyyál range recedes from the sea, ending a few miles to the northward: the great plain inland of Bú-shehr commencing about this place.

Khor Khuweir is a small creek about 9 miles to northward of Báshí, dry at the entrance at low water; it is near the bottom of Halíleh bay, a large and rather shallow bay, the shores of which are low and sandy, formed between the coast about Báshí and Ras Halíleh, the south-west point of Bú-shehr peninsula; near this khor, is a small fort and date grove.

At 2 or 3 miles to north-westward of Khor Khuweir is the entrance to a large creek draining the great swampy plain inland of Bú-shehr. Dry sands extend about a quarter of a mile off the mouth of this creek, which is nearly dry at low water, and the soundings within the bay are all under three fathoms, that depth being 4 or 5 miles off shore at Khor Khuweir; the bottom is chiefly mud.

From this the coast line of the mainland runs about N. by W.; it is very low, and ill defined; being, in rains, swampy for a considerable distance from the point reached by the tide; Bú-shehr peninsula is separated from it by a large salt water swamp, called Meshíleh. About 5 miles to northward of Khor Khuweir, is the fort of Tangistán, the residence of the chief, which has many date trees round it, and the date groves are continuous from it for many miles to northward. This is the northern extremity of the Tangistáni chief's territory.

RAS HALÍLEH, before mentioned, is a low point, with a rocky spit

extending a third of a mile off to south-westward. At two-thirds of a mile N.N.W. of the point, is the small village of Halíleh, containing about 100 men; it has a large square tower, and some cultivation is carried on. *Good water* is obtained in wells, about a mile to eastward of the point, and not more than 80 yards from the beach, just behind the sandy ridge; the water is only 3 feet from the surface, and little above the sea level; it is better than any obtainable near Bú-shehr for shipping. Close to westward of the wells are clumps of date trees, extending across the peninsula. There is good anchorage for small vessels, with Ras Halíleh bearing N.W. by N., or with the fort seen over the point, a quarter to half a mile off shore, in 3 fathoms, and sheltered from the shemál, but open to the shurgí. From Halíleh point the shore of the peninsula runs E. $\frac{1}{2}$ S. for 5 miles to the creek before mentioned, which drains the swamp; it forms a long narrow sandy spit, 5 or 6 feet above the sea, covered with tufts of coarse grass, and diminishing in breadth, from about a mile near the wells, to 50 yards at the extreme tip, having the great Meshíleh, or swamp inside it.

To the northward of Ras Halíleh, the coast has a N.W. by N. direction for $5\frac{1}{2}$ miles, to Ríshir mounds; it is all rocky near the sea, and the shore reef extends about 2 cables off. There are two date clumps about a mile to northward of Halíleh village, and the ground rises from that place to a table land in the centre of the peninsula; a white domed tomb on the highest part, called Imám Zádeh, is elevated 150 feet, and is 5 miles S. by E. of Bú-shehr; above Halíleh the table land ends abruptly towards the sea in cliffs. This dome, or the date trees to the eastward of Halíleh point, will be the first land seen when making Bú-shehr from the southward or westward.

DIRECTIONS.—The sea is quite clear after passing Ras Mutáf. In working up the gulf, the low shore of Ras al Khán requires caution in passing or standing in towards it. On the off shore tack a vessel should not stand off so far as to approach the islets Farsí and 'Arabí, the lead being no guide. The whole of the Persian mountains except Kúh Khormúj are out of sight from these islets, so that by keeping them well up, in clear weather, a vessel would not get too near them. In hazy weather, it would be especially desirable not to approach them, or to stand off more than 40 miles from the coast when abreast of them. The directions for making Bú-shehr are given in the next chapter.

CHAPTER XI.

NORTH COAST OF PERSIAN GULF. BÚ-SHEHR TO THE SHAT AL 'ARAB.

VARIATION $1^{\circ} 15'$ to $1^{\circ} 35'$ Westerly in 1864.

GENERAL OBSERVATIONS.—There are ranges of mountains at some distance from the coast, as far as the delta of the river, which is all low, with banks extending a great distance off. South of Deïlim bay there is no danger on the coast. The water in the Gulf shoals gradually, the deepest water opposite Bú-shehr being 30 fathoms, and the depth decreases to the northward. The towns north of Bú-shehr are all small, the population chiefly Persian. The tides are felt along the coast, and, above Kháreg, all across the sea; they increase in strength as the rivers are approached: the tide sets round the Persian coast along shore, as well as directly into their mouths from the southward. The tide hour varies from $7\frac{1}{2}$ hours at Bú-shehr to about 12 hours at the bar of the Shat al 'Arab river.

The Mountains near Bú-shehr are very characteristic in their appearance: the remarkable landmark Kúh Khormúj has been already described: to the northward of it, and 27 miles east of Bú-shehr, is a mountain ridge about 4,000 feet high, deeply furrowed, with a lump or nob on the summit at each end, and a third near the middle. Northward of this is another range, with a fall or step on the top, and a great bluff or fall on the northern end, 5,350 feet high, called Gísakún bluff;* it is N.E. $\frac{3}{4}$ E. 34 miles from Bú-shehr. To the left of this bluff is seen, when at Bú-shehr, the round top of a mountain, over 10,000 feet high, on which snow lies for some months; it is 41 miles to north-eastward of the bluff. To the northward of Gísakún bluff, the range is much lower, and stretches to northward, leaving a great plain between the mountains and the sea. From Bú-shehr harbour are seen between the Gísakún bluff range, and the one south of it, a little Asses-ears, and a barn topped peak, situated near each other on a range much farther inland. The Bú-Reyyál range, which is visible to the southward, forms in a saddle peak, or great notch.

* So called from the town of that name in its vicinity; the road to Shíráz from Bú-shehr passes close to northward of this.

ABÚ-SHEHR, always pronounced Bú-shehr,* the principal sea port of Persia, is a town of about 12,000 inhabitants, and occupies a low point of land, at the north end of the peninsula already mentioned, which is 11 miles in length from the town to Ras Halíleh, by 3 miles broad in the centre. The town, which is $1\frac{3}{4}$ miles in circumference, is poorly built, the only architectural feature being several high bádghirs, or wind-towers. It is defended on the land side by a wall with many towers, built across the isthmus, and a small outwork; and, towards the sea, which surrounds it on three sides, by round towers at short distances apart, which are intended to mount guns, and by a large redoubt at the north end, on the creek side. The British Residency is a large building near the south-west corner, with a flag-staff close to it, and the Persian governor's residence is a square fort at the south-east corner, near the creek, at which is the Persian flag-staff. The highest part of the ground on which the town stands is a rocky ridge near the east side, which does not exceed 40 feet in height; a large bádghir, which stands on this, is the highest building in the town, and its top is elevated 90 feet above the mean sea level. This may be seen at a distance of 10 miles, and, when coming from the northward, is visible before any other part of the town or low land. The streets are narrow and dirty, and there is no attempt at draining, paving of any kind, or lighting. This place is directly under the Persian government, who keep a garrison of Sarbáz,† and some field pieces here. The governor is called Darya-Beg, or Lord of the sea, and is under the prince of Fárs. The amount of duties levied on exports and imports is variable, and sometimes certain articles are prohibited.‡

The population is chiefly a mixed race of Arab and Persian, that of the country round being almost exclusively Persian: about a hundred Armenian merchants are settled here, and have a small Christian church in the town.§ It is the station of the British Political Resident in the Persian Gulf, and the head quarters of the Persian Gulf squadron.

* The present town is probably less than 200 years old; the E. I. Company abandoned their factory at Gombroon, in 1761, and established one at this place shortly afterwards, which has, since the early part of this century, been a purely diplomatic establishment. This town was taken by the British army on 10th December 1856, and held by them till the conclusion of peace with Persia in 1857.

† Persian regular troops.

‡ On one occasion, when two or three ships had arrived to load with grain, of which there was plenty, the governor prohibited the export, on the plea that food was wanted in the country, thereby causing great loss to the shippers for demurrage; but it was intimated that if a certain sum were presented to the Darya Beg, the prohibition would be withdrawn.

§ In this church are monuments to several English officers who fell in the Persian campaign of 1856-7.

A considerable trade is carried on with Basrah, India, Batavia, and the Mauritius : the traffic with the interior being by caravans of mules, which are the only animals capable of getting over the passes into the interior. The distance to Shiráz is about 180 miles. The exports are corn, horses, carpets, dried fruits, rose water, and drugs : the imports, dates, piece goods, timber, sugar, indigo, iron, &c. About 12 large baghalahs which trade with India, belong to this port, and many smaller coasting vessels. Part of the commerce is carried on in baghalahs from Koweit and other ports in the Gulf, and it is visited by a few European ships from Batavia, the Mauritius, and Calcutta. Supplies are easily obtained at a reasonable rate, as, cattle, vegetables, fruit, and other articles required for a ship, excepting salt meat. The drinking water used in the town is brought from wells, at a distance of 1 to 3 miles to the southward, the most distant being the best : the best water for ships is brought from Halíleh bay, but the boats are sometimes detained by shemáls for one or two days. There is no fuel for steamers, and the supply of firewood is limited. Boats are not allowed to leave, or arrive at, the town wharves between sunset and daylight. The Bú-shehr boats fly a red flag, with the two-bladed sword of 'Ali,* in white, in the centre of the field.

The south-west tower of the town wall stands on little cliffs, 15 to 20 feet high, which begin opposite the Residency, and extend S. by W., half a mile from the town ; beyond these the coast is low and sandy, as far as Ríshir point, forming a broad point, called Ras as Shagháb, at $3\frac{1}{2}$ miles S.S.W. of the town, which may be known by a small clump of date trees half a mile south of it, and appears prominent from the northward or southward. There is a well of good water at these trees, close to the shore ; boats often fill up here, lying in a small bight in the shore reef. Coming from the southward the town is first seen over this point, if the vessel is close in. Two miles from the town, is a small fishing village called Mufgheh, between which and the Residency cliffs, the shore forms a sandy bay.

From Ras Shagháb the coast trends gradually to S.S.E. for 2 miles, to Ríshir point, which is of low cliff, the north point of a small bay, having cliffs all round. On these are the mounds of Ríshir † fort, which are

* Called Zulfikar.

† These are undoubtedly very ancient, probably cotemporary with Babylon, from the fact that bricks with the cuneiform character are found in a mound, two miles to the eastward, which forms part of the remains. Sir W. Ousely says that the Persian geographer, Hamdallah Cázvini, who wrote in the 14th century, dates its foundation above 500 B.C. The mounds above mentioned are very remarkable, and were probably a citadel; they are 20 to 30 feet above the ground, and surrounded by a broad, and

80 to 90 feet above the sea, and enclose a quadrangular space about 300 yards across.

Imám Zádeh tomb or mosque, which has a white dome, stands in a little village, on the highest part of the peninsula, about a mile E. by N. of Ríshir fort, and is visible 13 miles. Outside the walls of Bú-shehr, the ground is swampy, and sometimes overflowed at extraordinary high tides, for upwards of a mile to the southward, excepting a narrow strip along the west coast. It thence rises in a gradual slope to Imám Zádeh village, and is partly well cultivated, with several small hamlets, clumps of date and other trees, and many wells. To the southward of Imám Zádeh the land is very rugged and broken, as far as Halíleh, the high ground ending on all sides in little cliffs. Very fine grapes grow on the rocky ground about Imám Zádeh.

The east coast of the peninsula runs in a curve for $1\frac{1}{2}$ miles to Ras Fúder, which bears S.E. $\frac{1}{2}$ E. from the town, and is about 30 feet high, with a few date trees on it; between it and the town the land is swampy. From Fúder the edge of the swamp or meshíleh, which separates the peninsula from the main, runs to S.S.E. for nearly 5 miles, to a low point, with groves of date trees, and cultivation all along the low belt formed between the swamp and the rising ground near Imám Zádeh. Opposite this point is the highest and driest part of the meshíleh, and therefore the best place to cross to the main land; but in dry weather, or at neaps, the caravans cross it a mile or more to the northward. Just below this point is a small fort and village called Tengek, and hence the edge of the swamp runs to southward behind Halíleh bay.

The probable breadth of the meshíleh is 3 to 4 miles, between this part of the peninsula and the mainland, which is very low for many miles from the edge of the swamp, and beyond Shíf to the northward.

To north-eastward of Fúder, and separated from it by the creek, is a large swampy island called Maharag, which has some fishermen's huts

still deep, ditch, on the three sides towards the land; the fourth, towards the sea, is open. The country for a mile or more round this, is a series of heaps or mounds, all probably remains of the city which must have existed here. Earthen urns, containing human remains, have been dug up in the neighbourhood, but without inscriptions; this mode of interment has never been in use among Mohammedans, or probably even among the Gabrs or fire worshippers. The mound where the inscriptions are found is about 30 feet high, and on being dug into from the top a short distance, the bricks are found regularly laid in courses. Before the establishment of Bú-shehr, there was a large Mohammedan town here, extensive grave yards still existing, with dates on the tombs from 100 to 200 years ago; the modern village of Ríshir is insignificant. On Dec. 9th, 1856, this strong position was taken by assault, with some loss, by the English army advancing on Bú-shehr; the mounds were occupied by about 800 matchlockmen of the Tangistáni tribe.

on its west end, a third of a mile distant from Fúder point: it extends thence upwards of $1\frac{1}{2}$ miles to east-north-eastward, and is partly overflowed at high springs, being nowhere more than 3 or 4 feet above the sea.

Jezíret Sheikh S'aad * is a low island, 4 miles long north and south, lying on the east side of the harbour. It has a small village and tower on its north end; the latter, which bears N.N.E. $5\frac{1}{2}$ miles from the Residency flagstaff, stands on the north point, which is rocky, and about 10 feet above the sea, being the highest part of the island. The village is inhabited by boatmen, who carry on the traffic between Bú-shehr and Shíf: a small creek, running into the island, divides the village into two parts. Many men of the squadron have been buried here from time to time. There is no water here except after rains; in the summer it has to be brought from Bú-shehr. At $2\frac{1}{2}$ miles South of this tower are two date trees; these and the tower are useful as marks in the harbour. The west coast of the island is sandy, with rocky patches, and it is all swampy, except a narrow strip along its northern and western sides: the south end is separated from Maharag by a channel nearly dry at low water, and half a mile broad.

Shíf is a low rocky point of the mainland, $1\frac{1}{2}$ miles east of the tower on Sheikh S'aad; it is 10 to 15 feet high, and is the only landing place on the main near Bú-shehr. Many of the supplies from the interior are brought down to this point, and shipped thence for that town, thereby saving the long round by the meshíleh. Inland of Shíf the country is low, barren, and partly swampy for some miles, and to the northward of it are extensive swamps as far as Rúhilleh.

Ras as Shat, the point, which, with the banks off it, forms the shelter to Bú-shehr harbour against the shemál, bears N.W. $\frac{3}{4}$ W. 10 miles from the Residency, and is very low and sandy, hardly above the sea level; it is a narrow strip of sand, and inside it is an extensive swamp intersected by numerous creeks extending for many miles inland, and to the eastward, beyond Shíf. All these creeks have deep water inside, but only 2 to 3 feet at the entrance.

ABÚ-SHEHR HARBOUR.—The harbour, called by the Arabs Khor Deíreh, is a belt of deep water between Rigget as Sáfí, or "the inner bank," which extends off the town, and "the outer bank," or Rigget al 'Aalí, extending southward from Ras as Shat.

* Called by the Bú-shehr boatmen merely Jezíreh or the island; near the tower is the ruined tomb of the Sheikh, whose name it bears; and to the eastward of this are remains of a town of some antiquity, consisting of extensive mounds, and ancient tombs, and called Bandargáh.

APPROACHES to the HARBOUR.—From Ras Halíleh to Shagháb point, a rocky reef fronts the coast to a distance of 1 to 2 cables, being most extensive at the latter place, where also, 3 fathoms are very near its edge; while to the southward, the 3 fathoms line is about a mile off shore. Outside this, the depths increase regularly, 6 fathoms being $2\frac{1}{2}$ miles off. Twenty fathoms are 10 to 11 miles off shore, from Ras Halíleh as far as Ras as Shat. This rocky shore reef ends* in the bay, about a mile south of the town; it is most extensive just above Mufgheh, being there a quarter of a mile off shore; a little boat harbour being formed inside it, opposite that village.

Ras as Shat has 10 fathoms at 3 miles off, thence shoaling regularly to 2 fathoms, half a mile off shore. From this point the edge of the Outer bank runs to south-eastward till opposite Bú-shehr; it forms a long narrow tail or spit, running north and south: on its southern tip, which bears W.S.W. $2\frac{3}{4}$ miles from the Residency flag-staff, it has 13 feet at low water springs, thence shoaling gradually to 12 feet, with the flagstaff bearing East; 9, when it bears S.E. by E. $\frac{1}{2}$ E., and so on to the dry banks E.S.E. of Ras as Shat. Under 9 feet it is hard sand, towards the southern end, the bottom is mixed with mud, and becomes softer until it is nearly as soft as the mud on either side. Outside it, the water shoals regularly up to the shoalest part, which is only 2 to 3 cables broad; 4 fathoms are one mile off; bottom soft mud. When on the shoalest part, Ras Shagháb bears S.S.E. $\frac{1}{4}$ E. The anchorage, called the Outer roads, is in 4 fathoms just outside this bank, with the town bearing E. by N. It is used by vessels of too large a draught to enter the roads; on this bearing boats can easily fetch off with the prevailing winds. The greatest draught of any vessel brought into the inner roads during the war was $19\frac{1}{2}$ feet, and this only at springs. The anchorage in the outer roads is quite exposed, both to the shemál and shurgí.

The Inner Bank consists of a series of dry sand-banks, lying off the north end of the town. Its outer edge, which commences just above the Residency, runs to N.W. by N. for $2\frac{1}{2}$ miles from the flagstaff. There are several boat channels through it, used at high water by boats entering or leaving the creek for the Outer roads. The north-west point of these shoals, called Ras al Marg, is the chief danger [entering the harbour, being a lee shore in a shemál, and steep-to: the deepest water in the harbour is close to its edge. It is the west end of a long, narrow sand-bank,

* Between this, and the little cliffs before mentioned, is a fine sandy beach clear of reef, in which most of the stores for the British army were landed, on their first arrival in Dec. 1856.

† i.e. the point of death; it is also called Umm al Jelíl.

dry at low water, which runs in a slight curve in an E. $\frac{1}{2}$ N. direction for $1\frac{1}{3}$ miles. This bank, which is on the south side of the anchorage, is called Lakfeh.

Entrance Channel.—From Ras al Marg a flat with 2 fathoms and under at low water, extends in a south direction outside the dry part of the inner bank until past the town: opposite the Residency, it extends $1\frac{1}{4}$ miles off shore. The entrance channel, between this and the outer bank, is 1 to $1\frac{1}{4}$ miles wide; it has only 14 feet at low water springs, with the Residency bearing East to E. by N., but deepens to the northward, and with the flagstaff E.S.E. there are 3 fathoms in it. To the southward of the outer bank there is a sort of continuation of it, with $2\frac{1}{2}$ to 3 fathoms, extending as far as Shagháb, having half a fathom more water inside. The bottom is everywhere soft mud.

Khor Deireh, by the English called the Inner roads,* is the name given to that part where large vessels anchor: the soundings are 3 to 4 fathoms at low water, over muddy bottom; it lies close outside the Lakfeh bank, and with the town bearing from S.E. by E. to S. by E. is only half a mile wide, having on its north side the shoal water extending off the dry banks to the eastward of Ras as Shat. The deepest water is close to the Lakfeh bank, on which the lead is no guide; on the north side the water shoals regularly, but quickly, the banks are hard sand, so that it is advisable to go about on getting a hard cast; or in a large ship to do so immediately the water shoals, and before getting a hard cast.

The anchorage is the better sheltered in a shemál the farther you are in to the eastward, and the easier it will be for boats to fetch the ship from the town: a large ship should anchor with the flagstaff S. by E. $\frac{1}{4}$ E. in 3 to $3\frac{1}{2}$ fathoms, $2\frac{1}{3}$ miles from the town, and quarter of a mile from the edge of the Lakfeh bank, so that she may have room to veer cable in a shemál. A small vessel might bring the flagstaff S. $\frac{1}{2}$ E., and anchor in $2\frac{1}{2}$ fathoms, just outside the baghalahs, half a mile to eastward of the berth for large vessels, and opposite a small boat passage through the Lakfeh bank, which is a very convenient berth. Opposite the east end of the Lakfeh, which is called Ras al Jábrí, there are only $1\frac{1}{2}$ fathoms in the harbour, and thence the depth decreases towards Sheikh S'aad. The holding-ground is everywhere very good in this anchorage.

Khor Sultání is the name given to a large creek, with a shallow bar, by which boats of light draught run up to the wharves at the town. It passes close along the east side of the town, where it is 2 cables broad, and has 4 to 6 fathoms, hard bottom; and thence runs to south-eastward,

* During the war there were 40 to 50 large ships lying in the Inner roads at one time.

between Fúder* and Maharag, where it splits into two branches, of which the principal runs to north-eastward, behind Maharag and Sheikh S'aad islands.

On the east side of Khor Sultání, a rocky bank extends from Maharag island for $2\frac{1}{2}$ miles to north-westward, ending in a point, one mile north of the town; the part to northward and eastward of the town is called 'Alaf-dán. Opposite the north end of this, the creek is half a mile broad, and has only a fathom in it at low water, and to the northward spreads out into a great flat, with mostly hard bottom, lying between this shoal and the Lakfeh bank, with depths of 3 to 4 feet at low water. There are two entrances to Khor Sultání across this flat, one just South of Ras al Marg, called Khor Bahrání, only used by small boats, as the entrance is exposed; the other, between Ras al Jábrí and the 'Alaf-dán. Through this latter, large baghalahs, drawing 10 feet, are brought into the creek to lay up, being first cleared out of everything. The shoalest water is just North of 'Alaf-dán, where there are only 11 to $11\frac{1}{2}$ feet, hard bottom, at high water springs. Boats of 7 to 8 feet draught can get in at any high water.†

Small native vessels anchor with Ras al Jábrí West to N.W. in 6 feet at low water; this anchorage is called Bandar al Gháwí.

Khor Bandar-gáh, a large creek, by which Shíf is approached, runs close along the north end of Sheikh S'aad, and has 5 to 8 fathoms in it opposite the tower: it then turns to south-eastward behind the island, passing a third of a mile to westward of Shíf point: at high water, the Shíf boats pass inside Sheikh S'aad in bad weather, and thence down the creek south of Maharag island to Fúder. The bar of Bandar-gáh creek, $1\frac{1}{4}$ miles West of the tower, has only half a fathom at low water: a reef runs off $1\frac{1}{4}$ miles S.W. from the tower, and there is another projecting as much on the north side of this creek.‡

The water is very shoal off the west side of Sheikh S'aad; and between

* The surveying brig *Euphrates*, during the Persian campaign, was brought into Khor Sultání, drawing $10\frac{1}{2}$ feet, and stationed half a mile S.E. of Ras Fúder in the southern branch of this creek, to assist in the defence of the British camp if required.

† The marks for entering are not easily made out by a stranger; the pilots will take vessels of the above draught in. A rocky spit extends a quarter of a mile to south-eastward of Ras al Jábrí, which you may haul round, when all the cliffs near the Residency are shut in behind the town; when to the southward of this spit, the two date trees on Sheikh S'aad will bear E. by N.: then haul up to W. by S. until all the date trees (about a dozen) on Fúder are only just seen clear of the town, when stand in for the boats in the creek.

‡ At $1\frac{3}{4}$ miles N.N.W. of Sheikh S'aad, is a small sandy point called Tehímíyeh, with rocks extending some distance off, on which foot passengers to the interior sometimes land at high water.

it and Maharag a rocky flat projects about a mile, with a deep blind channel between it and 'Alafdán, running to southward till opposite, and only $3\frac{1}{2}$ cables from the town, it is separated at the head by a narrow rocky ridge from Khor Sultání. From Bandar-gáh creek to Ras as Shat are extensive mud banks, intersected by numerous large and deep creeks, draining the swamps, which are all shallow at their entrance. There are a few sand knolls on these mud banks, only covered at highest springs and seen from the inner roads at low water.

TIDES.—It is high water at Bú-shehr, on full and change, at about $7\frac{1}{4}$ hours, the time being somewhat variable. The spring rise and fall varies from 6 to 8 feet, and the neaps rise from 4 to 6, their range being 2 to 4 feet. In summer, the day tides, and in winter the night tides, are much the greater, the second tide being, in either case, quite insignificant. The winds affect the tide very much, the shemál making it later, and lowering the general level of the water, while the shurgí causes high tides, and prevents the water from ebbing.*

In the offing, the stream, which sets up and down the coast, is weak, and sometimes replaced by currents, of a half to one mile per hour, setting with, or perhaps against the prevailing winds (*see* page 10). In the entrance to the harbour, the stream sets north and south, and when near the inner bank, to eastward, across it into the creek, tending to set a vessel over to that side; and the ebb the reverse. In the anchorage it sets east and west along the Lakfeh bank, and is weak on the shoal flats to north and east of the anchorage. The tide is very strong in Khor Sultání opposite the town, and sets to eastward and westward across and through the inner bank until that bank is dry, when it takes the direction of the channel. The stream is also strong round the north end of Sheikh S'aad.

DIRECTIONS.—The depths are given for low water springs. A pilot † will always come off, weather permitting, if a vessel heave-to for him; do so in $3\frac{1}{2}$ or 4 fathoms with the Residency E. by N.; a vessel drawing more than 14 feet would have to wait for the tide. The mud is so soft in the entrance channel, that a vessel would come to no harm if she touched the bottom ‡ in that part.

Making the place.—When so far out that the low land is not seen, Gísakún bluff, which bears N.E. $\frac{3}{4}$ E. from the town, will, in clear weather, enable a vessel to judge her position.

Coming from the southward, if tolerably close in, the date groves in Halíleh bay will be the first objects seen; a ship may keep in soundings of

* The July spring tide is the highest in the year, which may be due to the S.W. monsoon heaping up the water in the gulf.

† The charge for pilotage is $1\frac{1}{2}$ keráns per foot draught.

‡ Unless indeed a steamer, whose injection valves were under the bilge.

5 to 7 fathoms till past Ríshir, when the depth decreases, and she may keep in $3\frac{1}{2}$ to 3 fathoms, or a mile off shore, till opposite the tail of the outer bank, when the depths will decrease to $2\frac{1}{2}$ fathoms. By night, she should endeavour to sight the land, by keeping as close in as possible, paying great attention to the lead, so as not to run past the town, and get near the low point Ras as Shat. The town would be seen forming the termination of the land, appearing detached from the peninsula, and if any vessels were in the harbour, blue lights, &c., would be answered. At night, a stranger had best anchor in 4 to 5 fathoms with the town East to E. by S.

Coming from the northward, a vessel would stand past Ras as Shat in 5 fathoms, being guided by the lead; when abreast of that point, which is not visible more than 3 miles, the high bádghir in the town would be sighted; she would then stand along the edge of the outer bank till opposite the town.

Standing in from seaward, Imám Zádéh dome would be first seen, especially in the afternoon, showing white, when in 18 to 20 fathoms, the town not being seen till in 15 fathoms. The soundings are quite regular.

Entering the Harbour.*—Two buoys are at present maintained here by the British Government, one on the tail of the outer bank, the other off Ras al Marg.

To enter the harbour pass close to the southward of the outer buoy, and then haul up N. $\frac{1}{2}$ E., passing a cable's length to westward of the inner buoy, and then stand for the shipping and anchor as directed in the next paragraph.

The following directions are now chiefly useful in case of the buoys getting adrift.

The tail of the outer bank should be crossed with the Residency bearing E. by N. for a large vessel, and E. to E. by S. for a small vessel. The English and Persian flagstuffs are in one when bearing E. by N., and are a good mark to cross the outer bank with. By bringing the Residency E.N.E., or the north end of the town on with the fall in the highest part of the Gísakún range, a vessel would get about a foot more water; but it is an advantage to cross as high up as possible, as it is the easier to fetch in with the prevailing winds; the bank, also, is more defined, and it is easier to make sure you have crossed it. The water will shoal regularly, but quickly up to its edge, and when on it, the bottom is somewhat harder than on either side of it. With the Residency East, the difference is marked, but when bearing E.N.E., the variation both of depth and nature of bottom is very slight, and requires great atten-

* There are no good leading marks, and the mountains are commonly not visible.

tion to the lead to observe it. There is no good cross bearing to tell you when you are over it. Ras Shagháb, the outer point of land known by the small clump of date trees, bears S.S.E. when inside it, and S. $\frac{1}{2}$ E. when over on the east side of the entrance channel. If crossing with the two flagstaffs in one, you will be over the bank, when Imám Zádéh dome is in one with the left peak of the notch in the Asses Ears range. If running up from the southward along shore, a vessel may pass Ras Shagháb at half to 1 mile off, and should not bring that point to bear to southward of S. $\frac{1}{2}$ E. till off Ras al Marg, the north-west point of the inner bank.

As soon as you are sure of having crossed the outer bank, haul up N. by E. to N. by E. $\frac{1}{2}$ E., till past Ras al Marg, or if you have to work up, tack on either side as soon as the water begins to shoal. In working up in a small vessel, you may stand over towards the inner bank, till the south end of the Residency cliffs is nearly in one with the two large round trees, on the rising ground to the left of Imám Zádéh, or till those cliffs are just inside the notch in Asses Ears range, if the hills are visible. It is not advisable to get a hard cast on the edge of the outer bank, when near Ras al Marg, unless in a small quick working vessel, as you would then be very close to the shoalest part.

Ras al Marg generally shows well by the breakers on it, except near high water, or when quite smooth. When off it, Residency flagstaff bears S.S.E. $\frac{3}{4}$ E., the two date trees on Sheikh S'aad, E. $\frac{3}{4}$ N., and the shipping in the anchorage E.N.E. The narrowest part of the channel is opposite Ras al Marg, being there only half a mile wide, and the outer bank is at this part rather steep-to; on the north side of Ras al Marg, 4 fathoms are within half a cable of the dry part of the Lakfeh bank. When past this point, you may stand to north-eastward, keeping the shipping a little on the starboard bow, and anchor, according to the draught, with the Residency S. by E. $\frac{1}{2}$ E. to S. $\frac{1}{2}$ E. The two date trees bearing E. $\frac{1}{4}$ N., or just open to southward of a small peak on the back range, to the right of the little barn and paps already mentioned, will be a close mark to clear the whole of the Lakfeh bank on its north side.

JEZÍRET KHÁREG is 4 miles long north and south by 3 broad at the northern end. The north-east point bears N.W. by W. 31 miles from Bú-shehr. Kháreg has a range of table-topped hills, ending in bluffs, running north and south its whole length; the highest point is a small tomb, with a dome, on the summit near the middle of the island; it is elevated 284 feet, and visible 17 to 18 miles. The hills come close down to the south point in precipitous bluffs, with detached table lumps. Towards the north-west end the hills decrease in height, and end at that point in cliffs 20 to 30 feet high. At one mile from this point, and one-

third of a mile from the north coast, is a quoin-shaped hill, about 200 feet high, with a tree and small building on the summit, and conspicuous, except from the northward, when it is not seen against the other higher hills. The west coast has a series of rocky points with sandy beaches between, the hills ending abruptly in cliffs. On the east side is a plain, a mile in extent, and cultivated in parts, with date groves and gardens, having a pretty appearance from seaward. It ends in the low sandy north-east point, on which stands the fort and village,* with a flagstaff in the north-east angle, or citadel. It contains now about 400 men, chiefly fishermen and Basrah pilots. There is a small garrison of regular Persian troops, with one or two guns. Excellent water is easily procurable here, from wells close to the beach, and at a cheap rate. A few cattle, and some vegetables, &c., may be procured. All ships bound to the river call here for a pilot, it being their station or residence. This island, with Khárgú, is under the governor of Bú-shehr. The landing at low water is best just to northward of the flagstaff; at high water you may land anywhere along the beach near the fort, the boats running over the reef.

Anchorage.—Kháreg is surrounded by a rocky reef, extending nowhere more than half a mile off shore. Off the fort point there is no reef, but a spit extends three quarters of a mile off, with not less than $3\frac{1}{2}$ fathoms on it close to the point, and $4\frac{1}{2}$ farther out, 6 to 10 fathoms being close to on either side. South of the fort point the east coast forms a sandy bay, in which the reef extends one-third of a mile off shore, with 7 fathoms close to its edge. The most convenient anchorage in summer is in 7 to 8 fathoms, a third of a mile off shore, with the quoin hill just open to southward of the fort, and quite sheltered from the shemál; in winter, a vessel should anchor farther out, in 9 or 10 fathoms, as, if a shurgí came on, she would have to shift round to north-westward of the fort, and anchor with the flagstaff S.S.E., three quarters of a mile, in 7 fathoms, and sheltered from the south-easter, but exposed to the shemál. This

* This fort, which is a third of a mile in length, was built in 1754 by the Dutch, who established a settlement here, but were dispossessed by Mír Mahannah in 1765. It is ruinous, except the citadel in the north-east corner, which has been lately repaired by the Persian government, but is not a work of any strength. The English have occupied this island on two occasions, from 1838 to 1842, and 1856-7. At $1\frac{1}{4}$ miles to westward of the fort, is a tomb with a spire, on the rising ground, the shrine of Mír Mohammed, a son of 'Alí; an inscription states that it was rebuilt 540 years ago. There are 9 or 10 other Mohammedan shrines on the island, in one of which is shown the impression, in the rock, of the hand of the prophet al Khizr, believed by them to be still alive. Just to eastward of the mosque, are some caverns excavated in the rock, probably of the Gabr times, and used for burial places; below these are many ancient troughs or cells, also excavated in the rock, similar to those at Táhrí.

anchorage is in the strait between this island and Khárgú, and quarter of a mile off the reef on the north side of the island. The holding ground is indifferent, and during the winter, a vessel must always be prepared to shift round the point, according to the wind, and it is preferable to do so at the commencement of the gale. In the summer, native boats are made fast to the shore, in a small bight formed by the extreme of the fort point, with about six feet in it at low water. To westward of the fort, the shore forms a sandy bay, the reef extending half a mile off in the centre. Off the north-west point the reef does not extend more than a quarter of a mile; the west side has not been examined, but the reef is less extensive than on the north side; off the south end there is no reef beyond 2 cables.

JEZÍRET KHÁRGÚ,* a very low white sandy island, visible only 6 miles by day, and very difficult to see at night, is 3 miles long N.N.E. and S.S.W., by a third of a mile broad; its south end lies North $2\frac{1}{4}$ miles from Khareg fort flagstaff. It is barren and uninhabited, and has some brushwood on it, and a few stunted date trees at the north end, where indifferent water may be obtained by digging shallow wells.

The north end of Khárgú is clear of reef; on the west and south sides, a flat rocky reef extends half to three quarters of a mile off, with 7 to 10 fathoms close to. On the east side, foul ground extends a quarter to half a mile, with 12 to 15 fathoms within a quarter of a mile of its edge; the best landing is at the north-east corner.

Soundings near Kháreg and Khárgú.—In the strait between the two islands, the clear channel of which is a mile broad between the reefs, the soundings are irregular, 5 to 9 fathoms, over hard bottom, and these depths are carried close to the reefs. Kháreg is deep-to on its west side; no soundings have been taken close to the reef, but there are 25 to 30 fathoms, the deepest water in this part of the gulf, at a short distance off it, and off the north-west corner; on the east and south sides, 21 fathoms are 6 miles off: this is the deepest water between the island and the main, and thence the depth decreases to 12 fathoms, at one mile off the island. At one mile from the east and north sides of Khárgú there are 20 to 25 fathoms, the depth thence decreasing towards the mainland. On the west side 12 fathoms are found close to the reef, and also at two miles from the island, the depth increasing to 18 fathoms at 5 miles distance.

DIRECTIONS.—See page 33. Attention is required to the tide, which is strong near the islands and through the straits. It is high water, at full and change, at 8 hours, rise and fall 6 to 7 feet. Khárgú is some-

* Called by the Arabs also Khuweírí. E.I.C. brig of war *Euphrates*, ran on this island at night, in December 1848, during a south-easter; it not being seen at all.

times seen on a moonlight night, showing as a white streak, but not till near the reef, which is very steep-to on the east side of the island. Kháreg, from its brown colour, is often quite invisible at night.

RAS AS SHAT TO RAS HÚL BARKÁN.—The coast runs about N.N.W. for 73 miles, to the head of the bay called Dúhet Deilim, the northernmost bight of the Persian Gulf, and thence turns to W.S.W. for 28 miles to Barkán, at which point the delta formed by the rivers commences. The whole coast is free from danger, and the soundings are regular. Northward of Khárgú the depths are under 20 fathoms, quite across the gulf, decreasing towards the rivers. The tides are perceptible all along this shore, increasing in strength to the northward: they set along the coast and round Deilim bay.

ASPECT of the COAST. The shore is low, the mountains being at some distance inland, excepting Kúh-i-Bang,* which is a range of hills 1,000 feet high, and visible upwards of 30 miles: the highest part is 30 miles N. $\frac{1}{2}$ E. from Kháreg fort. It lies only 2 miles from the coast, and has a precipitous face on its seaward side; so that from the southward it makes in a remarkable bluff of light colour, with rather a jagged outline. The range extends 12 miles about parallel to the coast. North of Gísakún bluff are a series of mountain ranges 30 to 40 miles from the coast, over which are seen the tops of others, covered with snow in winter. Inland of Kúh-i-Bang, and separated from it by a valley, is a range about 15 miles from the coast, 2,000 to 3,000 feet high, but with no conspicuous peak on it. Its southern end is 30 miles north of Bú-shehr, the country south of it being apparently a dead flat from the coast as far inland as the Gísakún range.

A range of lower hills, running east and west, comes within 3 or 4 miles of the head of Deilim bay and thence turns to north-westward into the interior, decreasing in height to the westward. This range is the westernmost on the Persian coast; the whole head of the gulf west of it being a low alluvial plain. On this range, 25 miles E. $\frac{3}{4}$ N. from Deilim town, is a sharp peak, remarkable when on that bearing, and at its western extreme, as seen from Deilim bay, is a remarkable funnel hill, which is 26 miles N.W. $\frac{1}{2}$ N. from that town, and 550 feet high.

Kúh Behbahún is a great mountain mass of irregular outline, lying in an east and west direction; the highest part is 10,400 feet high, and in very clear weather is seen 125 miles, or from the bar of the Basrah river. The summit is 46 $\frac{1}{2}$ miles N.E. by E. from Deilim, and has snow on it for six months in the year.

* There is said to be a ruined fort on the summit of this hill.

Ras as Shat to Sabz Pushán.—The coast is low and sandy; the soundings off it are 10 fathoms at 3 miles off, opposite the former point, and the same depth 6 miles off shore farther to the northward; 15 fathoms being 4 to 9 miles off at the same parts. There is little or no shore reef, and no outlying danger. There is no shelter from the prevailing winds on this part of the coast.

Khor Rú-hilleh.—From Ras as Shat, the low strip of land forming the coast, has a N.N.W. direction for 5 miles to the entrance of this khor, which is navigated by boats of small burden for some miles to the village of the same name. It is shallow at the entrance, and after rains a good deal of fresh water is discharged through it from a small river or water course, in which it is said there is always *fresh water* beyond the range of the tide. Its banks are overflowed at high water for some distance from the mouth, the coast line being only a few feet above the level of high water, and consisting of a narrow strip of sand, with a few tufts of grass. The village of Rú-hilleh is small, the only thing seen from seaward over the swamps, is a small clump of date trees $5\frac{2}{3}$ miles N.E. of the entrance; there are several other salt water creeks on either side of this one, each of which has a native name; they are all shallow at the entrance, and have deep water inside.

Bandar Rígh* is a small town with some date trees near the coast, 13 miles N. $\frac{1}{2}$ W. of Khor Rú-hilleh, inhabited partly by Arabs of the Záb tribe. This place and the country south of it are under the governor of Bú-shehr. There is a small khor at the town, and it is fronted by two sandy islets, or banks, inside which native boats lie aground at low water; much grain is exported from this place to other parts of the gulf.

The coast between this and Rú-hilleh forms a slight bay, in which the 3 fathoms line is about 2 miles off shore. About half way between Bandar Rígh and Khor Rú-hilleh is a large creek called Khor Geseir, with a small village near its mouth; it is frequented by large boats. From Bandar Rígh, Sabz Pushán point, a slight projection of the coast, bears N.W. by N. 18 miles; the shore to the southward of it is all low and sandy.

GENÁWEH† is a large village half a mile from the coast, with a few

* This paragraph from Capt. Brucks' memoir. The name means sandy harbour.

† The tomb at this village is of some antiquity, but to eastward of the town, and extending far beyond the watercourse mentioned in the next paragraph, are very extensive mounds, indicating the site of a city. There is no masonry to be seen above ground, but where the watercourse has formed a section through the mounds, masses of masonry are seen on its banks and in it, built down as low as its bed, or 12 to 15 feet below the present surface of the ground; the masonry is good, and set in mortar; burnt bricks are also common; materials showing considerable antiquity. One or two wells, smoothly

date and other trees, and a large tomb with a dome or spire at the north end. On the sandy shore, half a mile S.W. of the tomb, stands a large round banyan tree, very conspicuous as a landmark, which is 21 miles N. by E. $\frac{1}{4}$ E. from Kháreg flagstaff. The village is inhabited chiefly by cultivators, and little is to be procured except fowls, which are very fine; cattle and vegetables. At this place the authority of the governor of Bú-shehr ends, the country to the northward being under the Khán of Behbahún, a large place some distance inland. The landing at low water is bad, as there are several ridges of dry sand, with 2 or 3 feet water inside them. The anchorage opposite the tree in 3 fathoms, is nearly $1\frac{1}{2}$ miles off shore.

Khor Khalú is the mouth of a tidal creek, or water course, which in rains discharges a large quantity of fresh water. The tide flows up it for several miles, and it is entered at high water by boats which belong to Genáweh, and carry on a small coasting trade. Its mouth is $1\frac{1}{4}$ miles South of Genáweh tree, and has nothing nearer than that landmark to distinguish it; dry sands extend, at low water, 1 to 2 cables off it. The bed of the watercourse trends round to northward, passing about a mile inland of Genáweh village.

KAL'AT HAIDER* is a small village on the coast 4 miles to north-westward of Genáweh; there are a few date trees near it; the inhabitants, who are cultivators, are poor but civil people, though wild in appearance. Fowls and cattle can be obtained at a cheap rate.

SABZ PUSHÁN† is a slightly projecting rocky point, with hillocks 40 to 50 feet high, and covered with jungle, close to the shore. On the summit is a small tomb, only seen when close in. A rocky shore reef extends 1 to $1\frac{1}{2}$ cables off this point, and there is a little water course close to eastward of it.

SABZ PUSHÁN to RAS AT TAMB.—The coast, just above the former place, runs N. W. for 7 miles, and thence trends rather to the northward, for 17 miles more, to the latter point; there are low hillocks covered with shrubs all along it, till near Ras at Tamb.‡

lined with cement, have recently been uncovered by accident, and large numbers of baked clay sling stones are found among the mounds. There are said to be many of these ruins or mounds along the coast to the northward, as far as Imám Husein, they are probably of the Gabr times.

* Called also Ka Haider.

† This name means "green cover."

‡ The hills inland of this part are said to be infested by robbers, and it would be advisable to be on your guard against straggling parties, if landing; or at any rate, if going any distance inland.

At 7 miles N. W. of Sabz Pushán, and S.W. by W. $\frac{1}{2}$ W. from the highest part of Kúh i Bang, is a small tomb on the coast hillocks about 50 feet above the sea; the land between it and that hill, which is here only $2\frac{1}{2}$ miles inland, being undulating, and rising towards the foot of the range. The coast is nearly straight between this tomb and Sabz Pushán, and has no shore reef beyond 1 to 2 cables; 4 fathoms are one mile off shore at this part, and it deepens regularly to 10 fathoms at 4 miles off.

KHOR SÍNÍ* is a small creek, about midway between the tomb just mentioned, and Ras at Tamb, with deep water inside it. To the southward of it is an old tomb or mosque, called Imám Husein, which is a good landmark; there is a small village, and some trees near it. Khor 'Abd is another creek, smaller than the last, and about 3 miles to south-eastward of Ras at Tamb. At one mile below that point is a creek called Khor Lúletein. The coast is safe to approach to a mile, the depths decrease to the northward, 10 fathoms being about 12 miles off shore at Ras at Tamb.

RAS AT TAMB is a low sandy point forming the south extreme of Dúhet Deilim; the land inshore of the sandy ridge forming the coast is swampy for many miles. Dry sands extend nearly a mile off this point, the soundings appearing to decrease regularly on approaching their edge.

RAS AT TAMB to RAS BARKÁN.—The coast forms a deep bay called Dúhet Deilim, with soundings under 8 fathoms; the shore is everywhere quite low, and only visible, 3 or 4 miles; as the 3 fathoms line is generally 3 to 4 miles off, it is not often sighted.

DEILIM is a town and fort, standing on the coast 5 miles N. $\frac{1}{4}$ E. from Ras at Tamb. The square fort, in and round which the houses are built, is the first thing seen approaching it. Half a mile to the southward of the fort are a few round trees, with a little cultivation, and at $2\frac{1}{2}$ miles N.N.W. of the fort is a single large round tree. Nine miles S. E. $\frac{1}{2}$ E. of Deilim is a small table hill, of light colour, with perpendicular sides; it is 165 feet high, and visible 14 miles. The coast here forms a mere strip of rocky land, only 10 to 15 feet above the sea, inland of which are swamps extending for several miles. At $1\frac{1}{4}$ miles to north-eastward of the town is a small fort, near the wells from which the town is supplied with water, and which lie on the other side of the swamp. Several forts with date groves are visible in the distant plain to northward of the table hill. Deilim is the port of the district of Behbahún, and much grain, ghee, &c., is exported, chiefly to Bú-shehr and Koweit. Cattle, &c., are obtainable. Water is dear and indifferent, being brought from a distance. The Arab

* This paragraph is taken from Capt. Brucks who states also there are extensive ruins at Khor Síní.

portion of the inhabitants is of the Abaidil tribe. Mud flats dry off half to 1 mile from the town, rendering landing difficult at low water. The native boats lie a quarter of a mile off the town, and dry at low water, in a small creek in this flat; the cargoes being loaded and unloaded on asses. The anchorage, in $2\frac{3}{4}$ fathoms, soft mud, is $2\frac{1}{4}$ to $2\frac{1}{2}$ miles off the town; it is sheltered in a shemál, but there would probably be much sea in a south-easter, though partly sheltered from the wind.

SHAH ABU'L SHAH* is a village with a large, white-domed tomb on the coast hillocks, visible 9 or 10 miles; it is $7\frac{3}{4}$ miles N.N.W. of Deïlim, with the people of which place the inhabitants are often at feud. There is a small creek here, and some coasting trade is carried on.

From this place the coast trends round to W.S.W. towards Ras Barkán; the hills are here within 3 miles of the coast, but a short distance to the westward they turn to northward, away from the coast, which, west of this place, is all exceedingly low, quite across the head of the Gulf.

RAS HÚL BARKÁN, or **BARKÁN**, is a very low point formed by a strip of sand, with tufts of grass, nearly overflowed at high water. Inland of it, all is swampy for some miles. At a distance of 3 miles are seen, when near the point, some date groves, and a tomb called Mír Amman, which are probably on the Hindíyán, or Táb river. Mud flats, overflowed at high water, extend some miles to westward of the point, and also half a mile off its south-east side. As 2 fathoms are 3 miles off to the southward, this point can only be sighted in a small vessel. The coast continues low, with shoal water off it, as far as Shah Abu'l Shah. As the soundings are regular, it is safe to approach by the lead.

SIRÍMEH† is a small cluster of round trees on the low shore, about 9 miles N.W. by N. from Ras Barkán, serving as a mark for the entrance of the Tábt‡ river, which lies between these trees and the point: the entrance, which is very shallow, has not been surveyed on a large scale; the boats navigating the river are only 20 to 30 tons.

BAS TUNÚB is a low point of the main, with a few shrubs and some

* So called from the Musulman Saint buried in the tomb.

† From this, as far as the mouth of Shat al 'Arab river, is compiled from Capt. Brucks, Lieut. Whitelock, Horsburgh's Directory, and information given by the head Basrah pilot (Abd-ar Rahman, 1858).

‡ Lieut. Whitelock, I.N., the only person who has visited the river, says the town of Hindíyán is about 30 miles from the mouth, and a poor place, built on both banks of the river; the inhabitants were not friendly; the river is very winding, especially near the mouth; some of the reaches come about two miles from the coast to the eastward of Barkán, so that native boats lying outside sometimes send across to the river for fresh water.

brushwood near it, lying 18 miles W.N.W. of Ras Barkán. About 3 miles to the northward of it, is the mouth of a river or creek, joining the Táb river, with some extensive ruins on its banks. The coast to the northward of this point has not been traced, it is nearly all overflowed at high water.

FASHT AL M'AYRÍTH is an extensive bank of sand and mud, extending 11 to 12 miles south of Ras Tunúb, and dry in patches at low water. There is a channel, called Khor Ghazlán, separating it from Ras Tunúb, and the shoal is divided into two parts by a narrow channel, running east and west, with 5 to 7 fathoms in it. The channel between this and the shoals off Barkán is about 4 miles broad, with deep water, and is called Khor Barkán.

Bunneh is a low, narrow island, $3\frac{1}{2}$ miles long, with a ruin on it, lying 2 miles west of Ras Tunúb, with a deep khor between it and that point.

Deíreh island is low, and partly swampy; it lies 3 miles S.W. of Bunneh, and there is a deep water khor between them, running to the southward, called Khor Wásteh. A sand bank lying to southward of this island, and steep-to, is called Aeíeh Shehm. To the northward of these islands are many banks with deep channels between, lying on the east side of Khor Músá, which have not been explored; they have in places 15 fathoms and upwards.

KHOR MÚSÁ is a great salt water inlet, receiving the water of the Dorak river, and possibly a branch of the Kárún. It runs in a N. by W. direction, passing about 5 miles to westward of Deíreh island; at 10 miles N.W. by N. of that island, there is a low islet, called Kabr an Nákhudá; from the south end of this, a bank, partly dry at low water, extends to southward, as far as the entrance of Khor Músá; it forms the eastern bank of that inlet. At 7 miles to north-westward of this islet, the khor splits into two branches. Kaseír bint Sísúán is a small rocky shoal in the middle of Khor Músá, about 3 miles S.S.W. of Kabr an Nákhudá; it has deep water on each side, and is steep-to. From this, a long, very narrow bank extends to southward, dividing Khor Músá into two parts: the soundings on it increase to 4 and 8 fathoms near the entrance, there being 8 to 12 on each side of it.

On the western side of Khor Músá is a low swampy tract, about 15 miles in breadth, between that creek and Khor Bamishír. The south-eastern point of it is called Bú Seíf: close to the westward of this, is a creek, called Khor Dorakistán, which is shoal at the entrance, and is said to join the Kárún river. The low coast on the west side of this creek, as far as Khor Bamishír, also bears the name of Dorakistán. About 8 miles to westward of the last is another creek, also joining the Kárún

river, called Khor Silíj, but neither of these creeks has been explored for any distance.

Meidán 'Alí, sometimes called the 'Alí Meidán, is the name of the great flat lying off this part, with soundings increasing regularly to 4 fathoms about 13 miles from the dry part: it is about 15 miles in breadth, and the soundings are quite regular on it;* the lines of equal depth being parallel to the coast, or about W.S.W. and E.N.E. The bottom on it is mud and sand, the latter predominating as the shore is approached. It is useful as a mark in making the river.

Off the south-west corner of the Meidán 'Alí is a rocky bank, least water said to be 4 fathoms. It is not a danger for ships bound to the river, as no greater draught than 19 feet ever crossed the bar. This bank lies S.E. by E. from the bar of the Shat al 'Arab.

KHOR BAMISHÍR or Behmeh Shír, a khor on the west side of the Meidán 'Alí, is the natural mouth of the Kárún river: it runs up the country nearly parallel to the Shat al 'Arab, and joins the Kárún near Mohammerah,† but is shallow near its junction with that river: it was formerly navigated a long way up. The soundings at the mouth of this khor, where it crosses the Meidán 'Alí, are hardly different from the regular soundings on the flat. The sand-bank on the east side, dry at half tide, which extends off the south-west corner of Dorakistán, is called Margán.

Khor Khafgeh is a deep khor running nearly parallel with the Shat al 'Arab, on the west side of the Meidán 'Alí, with soundings decreasing from 15 fathoms at the southern end, to 3 and 2 near the shore called Abádán. This khor does not enter the land, but bends round at 2 miles distance from the coast, and taking a west direction, joins the Shat al 'Arab, about $1\frac{1}{2}$ miles below its entrance between regular dry banks. The east and west portion of this khor, where the soundings are only $1\frac{1}{4}$ fathoms at low water, is called Khor Nasárí.

SHAT AL 'ARAB ‡ is the name by which the united stream of the Tigris and Euphrates is known to the Arabs; it is a fine river, navigable for large vessels § beyond Basrah, or to a distance of about 80 miles from the bar. Its breadth near the mouth averages three quarters of a mile, with soundings of 3 to 4 fathoms at low water.

* Hence the name Meidán, signifying level.

† Lieut. Selby, in 1842, passed down this khor from Mohammerah to the sea; the east water found was nine feet at low water.

‡ Or "river of the Arabs;" it is commonly called by English sailors, the "Basrah River," or "Euphrates."

§ The greatest draught known to the authors that has crossed the bar is 18 to $18\frac{1}{2}$ feet.

The entrance of the river, which is about 11 miles from that part of its banks dry at high water, lies between two banks under water; that on the eastern side, which separates it from Khor Khafgeh being called Margeh Abádán, or Abádán bank, and that on the west side, separating it from Khor 'Abdallah, the 'Abdallah bank.* This latter is of very soft mud, the water on it shoaling gradually from its tip, where there are $2\frac{1}{2}$ to 3 fathoms, towards the land, off which it dries at low water for a considerable distance; the Abádán bank is somewhat harder, having some sand mixed with the mud; like the other, it shoals gradually from 3 fathoms on the south tip to the northward. Both are steep to on the side towards the river, especially near the dry part. The entrance is divided into two channels by a hard sand-bank, called 'Aeïch Miyán,† which is nearly dry at low water, and the principal danger entering the river; it is hardest at the south end. The best channel, and that always used, is on the west side of this bank. The eastern channel, called Mahaddeh Miyán, has only 3 feet at low water. In the western channel, at its shoalest part, or the bar, the least water is 12 feet at low water springs, the rise and fall varying from 8 to 10 feet; the winds influence the depth of water on the bar to a certain extent. The points of land on either side of the entrance of the river between its banks, are not visible from the bar. Both are very low, with tufts of reeds. The western point, which projects the most, is called Ras al Bísheh; it tapers off very gradually from where the reeds are growing, to the part which is only dry at low tide.

On the west side of the 'Abdallah bank lies the Khor of the same name, already described (page 139). Little is known about it; it has not been visited since Lieut. Guy's survey (1825); there is probably deeper water in it than shown on the chart, and off the entrance it is said there are 18 and 20 fathoms.

PILOTS.—As already stated, the pilots for the river reside at Kháreg, where they are taken on board by ships proceeding thither: they are indispensable. The rate of pilotage is 15 keráns per foot draught for each time they cross the bar; and $1\frac{1}{2}$ keráns per day as long as the vessel remains at Basrah or M'akíl.

DIRECTIONS from KHÁREG to the RIVER.—On leaving Kháreg with a fair wind, the pilots steer to N.W. till in 10 fathoms off Ras Barkán; the course is then W.N.W. and W. by N. till on the Meídán 'Alí, which is their great mark for making the river; on this course, the water will

* The pilots believe this bank has extended considerably farther to seaward within their memory.

† i.e. middle ground shoal; it is generally pronounced Miyún.

deepen to 12 fathoms crossing Khor Barkán,* then shoal to 7 on the tail of the M'ayrith, again deepening to 15 in Khor Wásteh. After getting 7 fathoms on the east bank of Khor Músá, she will cross that khor in 12, perhaps getting a cast of 8 on the narrow ridge in the middle of it, and would then strike the Meidán 'Alí in 5 fathoms.†

With a foul wind, they work up the Persian coast till past Kúh i Bang, and will be off Barkán in 4 to 5 fathoms: in standing across West to the Meidán 'Alí from that position, she would get successively 10 or 11 fathoms in Khor Barkán, 3 or 4 off the M'ayrith sand, 12 in Khor Wásteh: 4 fathoms on the bank between that and Khor Músá, and 9 in the latter khor, getting on the Meidán in 3 fathoms.

When sure of being on the Meidán, by the regularity of the soundings, stand across it W. by S. to W.S.W., so as to keep in a line of 4 to $4\frac{1}{2}$ fathoms, low water: if you cannot lie up high enough, a short tack or two must be made to the northward, working between 4 and 6 fathoms, so as to be in the above depth when leaving the flat. If the tide is unfavourable, with a working wind, the pilots anchor on it for the flood. If a strong south-easter is blowing, they will not attempt to cross the bar, but will wait till it is over.

If you cross the Meidán 'Alí in 4 to $4\frac{1}{2}$ fathoms, you will get 13 to 16 in Khor Khafgeh, and will cross the tail of the Abádán in 4 or 5 fathoms, sandy bottom, deepening again to 7 or 8 in the entrance of the river. The pilots stand across till they shoal on the 'Abdallah bank, and then tack, working between that bank and the Miyán sand, till past the bar. In crossing the mouth of the river from Khor Khafgeh, you will have a little shoaler soundings in the centre, on the tail of the Miyán sand, but the 'Abdallah bank is recognized by the very soft nature of the bottom.

If you cross the Meidán in $3\frac{1}{2}$ fathoms you will get 12 in Khor Khafgeh, which would be due East of the south end of the Miyán, and must then keep a little to the southward, to avoid that bank.

In working past the Miyán, you should keep on the 'Abdallah side, tacking directly you shoal the water near the Miyán, as it is very steep-to. A large vessel must of course wait till near high water before attempting to cross the bar.

* The khors, and banks between them, all have continuations a long way to seaward, perfectly defined by the difference in the depth of water, the soundings in which are what the pilots entirely trust to to make the river. The reason of their making a course round by Barkán is to ascertain how many of the khors they have passed. When once on the Meidán 'Alí, they feel certain of their position.

† The space in which these overfalls between Khor Músá and Barkán occur, is called by the pilots Kharábeh.

From the bar to the entrance between the dry banks of the river, both the 'Abdallah and Abádán banks are steep-to, and the pilots tack immediately on shoaling; the western bank, being softer, is the safer to borrow on. The reeds at the mouth of the river will be seen soon after clearing the bar.

After leaving the Meidán 'Alí, if a working breeze, it will be necessary to anchor as soon as the tide makes against you, the ebb stream running 7 to 8 hours, or even more. The direction of the channel, after passing the bar, is about N.W. $\frac{1}{2}$ N. with soundings of 3 to 4 fathoms at low water.

Four buoys have been laid down in the entrance channel by the British Government,* one on the S.W. corner of the Miyán sand, which must be passed to westward of, the other three on the edge of the 'Abd-allah bank, and must be left on the port hand. A vessel is apt to be set over to one side or other of the channel, which is narrow, being under half a mile in parts.

Passage up the river to Basrah.†—There are large herds of cattle, and buffaloes, along the banks of the river; the latter often swim across, to graze on the islands in it. The banks are very low on either side for the entire distance, and intersected by numerous canals for irrigation; the land is often under water, except small raised banks between the plantations. The belt of land near the river is exceedingly fertile, and produces the finest dates in the world, also fruit, and vegetables of various kinds, with grain, &c. At the back of the date groves, which extend $\frac{1}{2}$ to 2 miles from the bank, all is a desolate swamp. Many wild pig are found along the banks. On the ebb, the water is quite fresh even at Faü, and fit for drinking, a little farther up it is so at all times of tide. Between the plantations of trees, are sandy tracts of land along the banks, which are uncultivated, although doubtless equally fertile with the rest. Supplies of fruit, vegetables, and cattle, can often be obtained at the villages on the banks, while waiting for the tide. The land on the east side, south of the Hafar, which forms a long narrow island, between this river and the Bamishír, is called Abádán. This river, from the mouth nearly as far as Basrah, is the boundary between Turkish and Persian territory.

After entering between the regular banks with vegetation, the eye is the chief guide. The southernmost part of these banks is quite

* The channel and bar were first buoyed by the English during the war with Persia, and a beacon was erected on Ras Bísheh, this, however, the Arabs soon pulled down.

† A survey of this river is much wanted. The remarks here offered are in default of any more detailed information; they are compiled partly from the authors' experience, and partly from various other sources.

swampy, all of soft alluvial mud, thickly grown with reeds and coarse grass : it is almost impossible to land, so soft is the mud. The first date grove is on the west bank, about 4 miles from Ras al Bísheh ; and there is a small village called Faü in it, which is under the Sheikh of Koweit. It is a thriving place, the plantations are yearly extending to the southward. The inhabitants are herdsmen and cultivators. A little farther up, on the opposite bank, begins a large date grove with a village called Kusbeh,* below which, and opposite Faü, are a few herdsmen's huts : this part below Kusbeh is called Shen.

The direction of the river is N.W. from the mouth, until past the south end of Kusbeh grove, when it turns to N. $\frac{1}{2}$ E. for about 4 miles, the deep water being on the Faü side, while off Kusbeh grove there is shoal water for a short distance.

Above Faü there is a space of 2 miles without date trees, at which distance a large grove commences, extending for 3 or 4 miles, with a large fort and village called M'aámer † at the back of the grove, and not visible from the river. There is also a small village and tower near the south end. Opposite the centre of this grove, is a gap of about 2 miles in extent in the trees on the opposite side of the river : a small village nearly opposite M'aámer, and at the north end of Kusbeh trees, being called Baghshet al Músád. The river then bends to N.W. and N.N.W. for 6 miles, after which it makes an abrupt turn to N.E. for about 2 miles. The point formed on the east bank by this bend is called Manyhy : there is a large date grove on it, ending just at the bend, with a fort and tomb behind the trees : a shoal flat lies a short distance off Manyhy trees, and ends just above the point, the deep channel being still on the west side. In the concave part of the west bank, opposite Manyhy point, is a date grove, and small village called Ad Dúreh. There is a space of about 3 miles without trees between this village, and M'aámer plantation. The western side of the short reach above Manyhy point is formed by an island covered with date trees, called Jezíret bin Fedágh : at this island the river bends round again to N.N.W., running nearly straight for about 13 miles, and having date trees on its west bank the whole distance : this long reach is called Chabdeh reach ; the deep channel crosses over between Fedágh island and Manyhy point, and thence is close to the east bank, all along this reach. A shoal extending nearly half way across the river, lies off the most projecting part of Fedágh island.

* This word means "reed."

† The rendezvous of the ships proceeding to attack Mohammerah in March 1857, was off this place, which is said by the Arabs to be Bandar Shemál, or sheltered from the north-wester, as compared with those reaches running more N.W. and S.E.

About 2 miles above Fedágh island are two forts at the back of the date groves and a village called Duásír; and nearly opposite the northern fort, are two tombs on the east side, at some distance from the river. The more distant of these is on the Bamishír river, which is here only about 3 miles from the Shat al 'Arab. Above Manyuh trees there is a distance of about 10 miles along the east bank, without any date trees, except a small clump opposite these tombs. At 3 miles above the tombs is a large date plantation, with a small village, called Sheteit, and above this a smaller one, called Buerdeh, which is just below the end of Chabdeh reach. Above Buerdeh, and opposite the south end of Mahalleh island, is a small village called Breyim.

The main channel of the river, at the end of this reach, bends round to West and W.S.W. for about 3 miles, which may be called Al Khust reach, a smaller branch running straight on to the north-westward, and joining the river again at Hurteh village; it is navigable by small boats: the island, of triangular shape, formed between it and the river, is called Mahalleh; both banks of this branch are thickly grown with date trees, but towards the main channel of the river, Mahalleh island is very low, and has no trees. It is also intersected by one or two small branches of the river. A bank, which is deep-to, extends off its south and south-west sides, contracting still further the navigable channel. The most projecting point, on the south side of Al Khust reach, is called Al Khust, or, by English seamen, deep water point. This is the narrowest part of the river, and there are 9 to 10 fathoms close to it; the soundings from Faü as far as this point, being 4 to 7 fathoms.

Below Al Khust are two or three low islands the west side of Chabdeh reach, nearly or quite overflowed at high water, and extending nearly as far as Duásír. The date groves extending along this bank from Fedágh island, end just beyond Al Khust; the fort of the same name is among the trees a little inland of the point.

The river, above Al Khust reach, turns to North and N. by E., for 6 or 7 miles, to the entrance of the Hafar river. The deep channel lies close round the abrupt curve opposite Mahalleh, and in working up, very short tacks are made between the south bank and the shoal off that island. Large vessels have to back and fill through this reach. At the bottom of the curve is a village and date grove called Seyhán, on either side of which is a space without trees for about a mile, and at that distance above it date groves commence, which are continuous for 2 or 3 miles past Zein point. About 3 miles above the bend, the island of Mahalleh ends: the village of Hurteh standing on the east bank of the river, opposite the north end of that island. Above this village is an open space between it and the date trees lining the south bank of the Hafar. A little below

Hurteh, and near the west bank of the river, is a shoal or mud island covered at high water.

The **Hafar** is a channel connecting the Kárún and Shat al 'Arab, said to be artificial, and very ancient:* it is about 3 miles long east and west, a third of a mile broad, and has 3 to 4 fathoms in it; both banks are lined with date trees. A mile from the entrance, on its north bank, stands the town of Mohammerah†, a poor place, but having a bazar where a few supplies may be obtained.

At about $1\frac{1}{2}$ miles to eastward of the town, the Kárún river is reached, which runs to north-eastward; and from this point, the Bamishír, the natural mouth of the Kárún, runs nearly straight in a south-east direction to the sea; but the principal part of the water of the Kárún is now discharged through the Hafar, into the Shat al 'Arab.

The mouth of the Hafar is the best place to take in water, as it is purer and cooler than the water of the Shat al 'Arab, particularly in the hot weather.

The soundings at the junction of the Hafar with the river, and thence as far as Al Khust, are 5 to 8 fathoms, and in parts even more. From the Hafar the river bends to W.N.W. and W. by N. for about 15 miles, which may be called Dubbeh reach; then turning to N.N.W. for about 5 miles, passing the town of Basrah; the banks being lined with date groves the whole way.

The point opposite the Hafar, which is called Zeïn, is deep-to, as are both entrance points of that river. At about 4 miles above Zeïn are two tombs, the eastern one with a spire, the western with a small dome. On the north bank about 3 miles above the Hafar, is a fort called Jáber.

North of Zeïn point is the east end of a chain of low grassy islands lying nearly in the centre of the river, and called Dubbeh or Umm al Khasásíf. The best channel, which is narrow, is on the north side of these islands. At the west end of Dubbeh island is the shoalest part of the river, with the spire tomb on the south bank, bearing about S.E. by S. This is the most difficult part of the navigation; there are probably not more than 16 to 18 feet at high water, and this only in the deepest part of the channel over this bar.

BASRAH.—This town, the port of Mesopotamia, lies nearly a mile from the river and is approached by a small creek, whose mouth is at

* Some say that Alexander the Great caused it to be cut; Dean Vincent says it is a more ancient work, and that Alexander found it there.

† On March 26th, 1857, the strong batteries erected by the Persians at the entrance of the Hafar, for the defence of their entrenched camp at this place, were destroyed in a few hours, by the I. N. squadron, and the entrenched camp then captured by the British army.

about the centre of Basrah reach. The only buildings seen from the river are a tall minaret in a suburb on its banks, and the wall surrounding it. There is a flagstaff, on which the Turkish flag is hoisted, at the custom house, which stands on the north side of the entrance to the creek. A Turkish guard-vessel, which is a small old-fashioned grab ship or brig, is always stationed off the town. The Turks have lately got some small gun boats, and have begun to run steamers between Basrah and Baghdad, a private English company has also begun to run a steamer on the river. The town of Basrah* is believed to contain at present 5,000 inhabitants, a mixture of Arabs and Turks, with some Persians, Armenians, and Jews. There are also many Banyans. There is a large fluctuating population, not permanently resident, of which it is difficult to give any probable estimate. Most of the buildings within the walls, which are of great extent, are ruinous: the present houses are chiefly of sun-dried bricks, and the streets are filthy in the extreme. It is governed by a Turkish functionary, who is under the Pasha of Baghdad. The heat in summer is intense, and the town is considered extremely unhealthy from June to October. Malignant fevers are then prevalent. In winter cold weather is experienced, sometimes even a white frost.

A considerable trade is carried on with India, though the number of European ships visiting it has much diminished. Horses, dates, rose-water, &c., are exported; the imports being piece goods, rice, &c. from India. Some English merchants settled at Baghdad carry on a direct trade with England on a small scale.

A ship should anchor here in 4 to 5 fathoms, in mid-channel, opposite the entrance to the creek, and should moor with open hawse to the westward. The creek is nearly dry at low water, and only entered by small boats; large native vessels lie out in the river to discharge cargo; passengers usually go up to the town in long canoes called beilum, which are propelled by poles at a considerable rate. There is a road or path to the town along the south side of this canal or creek, which is bordered on both sides by gardens, the trees in which overhang the water. Besides date trees there are pomegranates, and many other fruit trees.

M'akûl, the site of the British vice-consulate, is about 4 miles above Basrah, and 1 to 1½ miles beyond the end of Basrah reach, the river here turning more to the westward. The consulate is a large square building with a flagstaff. It is the place generally visited by government vessels; the armed steamer which carries the mail between Basrah and Baghdad

* The present town was founded by Omâr, the second Khalîf; an English factory was established here at the middle of the 17th century, and was abandoned about 1820.

also stops here. A small quantity of coal, belonging to Government, is kept in store, and the building is used as a small depôt for stores, &c., for the use of the river steamer. Above M'akíl the river as far as Kúrnah, at the junction of the Tigris and Euphrates, is navigable for small vessels ; the tide is felt 20 or 30 miles beyond this point, which is 45 miles above M'akíl. The tide in the river, is said to be about 6 hours later at Basrah than at the bar. The strength of the ebb in the river varies from 3 to 6 knots, that of the flood from 2 to 4 knots ; the ebb stream being about double the duration of the flood. If at anchor in the river during the ebb, plenty of cable will be required, especially if a shemál is blowing.

In the passage down the river, there is generally a fair wind. After passing Faü, the pilots make a slightly zigzag course, so as to shoal first on one side and then on the other, but since the buoys have been laid down, a course is shaped from one buoy to another : a course is steered E.S.E. for Khareg, as soon as you deepen over the bar to 5 fathoms. (See Chap. III.)

The soundings on this course will be 15 fathoms in Khor Khafgeh, then shoal to 7 on the tail of the rocky bank off the Meïdán 'Alí, afterwards, overfalls of 15 to 8 or 9 fathoms ; the water at last increasing regularly after being clear of the different khors off the river. The pilots will not take a vessel over the bar, either in a strong shemál or in a south-easter.

TIDE TABLE FOR THE PERSIAN GULF.

Name of Place.	Time of High Water at F. and C.	Rise on Springs.
	Hours.	Fect.
Rás Jibsh - - - -	IX $\frac{3}{4}$	7
Rás al Hed - - - -	IX $\frac{1}{2}$	9
Maskat (approximate) - - -	IX $\frac{1}{4}$	6 or 8
Jezíret Jún - - - -	IX $\frac{1}{2}$	10
Rás al Khaïmeh - - - -	XI $\frac{3}{4}$	7
Al Bida' (approximate) - - -	VII $\frac{1}{2}$	6
Bahreïn - - - -	V $\frac{1}{2}$	7
Jezíret 'Arabí (approximate)	VI $\frac{1}{2}$	—
Jezíret Kabr, or Kubbr - - -	—	8 $\frac{1}{2}$
Koweït - - - -	XII $\frac{1}{4}$	9
Basrah Bar - - - -	XII	—
Basrah Town (approximate) - -	VI	9
Jazíret Kharg or Kháreg - - -	VIII	6 $\frac{1}{2}$
Abú-shehr - - - -	VII $\frac{1}{2}$	7
Umm en Nakheïlah (approximate)	VII $\frac{1}{2}$	8
Tahrí (approximate) - - - -	V	—
Jezíret Kais - - - -	XII $\frac{3}{4}$	7 $\frac{1}{2}$
Jezíret Tumb - - - -	—	8
Lingeh (approximate) - - - -	XII	—
Básidúh - - - -	XII	10
Kesm (approximate) - - - -	X $\frac{1}{2}$	10 or 11
Jezíret Lárek - - - -	X $\frac{1}{4}$	—

TABLE OF POSITIONS*

ON THE

NORTH-EAST COAST OF ARABIA AND IN THE PERSIAN GULF.

Place.	Particular Spot.	Latitude, North.			Longitude, East.			Height in Feet.
		°	'	"	°	'	"	
Rás Jibsh -	-	21	27	30	59	21	30	
Rás al Khubbeh -	-	22	14	25	59	49	0	
Rás al Jincíz -	-	22	26	0	59	50	30	
Rás al Hed -	Sandy point -	22	33	0	59	48	0	
Súr -	Entrance of creek -	22	34	40	59	32	0	
Rás as Shijr -	-	23	0	0	59	13	0	
Rás Abú Dáúd -	Rocky point -	23	19	10	58	55	30	
Rás al Kheirán -	Cliff -	23	31	30	58	45	30	60
Maskat -	Fisher's rock -	23	37	55	58	35	58	10
" Saddle hill -	-	23	35	8	58	35	3	1,340
Jezíret al Fahil -	Highest part -	23	40	58	58	30	17	280
Jezíret Karabeh -	" -	23	50	28	58	10	30	25†
Sib -	Ruined fort E. end of town. -	23	41	11	58	11	25	
Jezíret Jún -	Highest part, W. end -	23	50	28	57	58	33	107
" -	Clive shoal (9 feet) -	23	51	3	57	57	22	
Birkeh -	Tower in centre of N. face of castle. -	23	42	40	57	54	11	
Jezíret Sawadí, great islet. -	Highest part near E. bluff -	23	47	20	57	48	20	280
Jebel Nakhl, pepper-box peak. -	-	23	19	48	57	53	6	7,000
Jebel Nakhl, sharp or E. peak. -	-	23	27	13	57	59	18	5,240
Jebel Nakhl, great peak -	-	23	25	3	57	56	48	6,270
" W. peak -	-	23	16	15	57	47	35	7,740
Jebel Rostag, a bluff of the Jebel Akhthar. -	-	23	14	15	57	15	54	9,900
Sohár -	S.E. tower of town wall -	24	21	50	56	45	40	
" peak -	-	24	17	42	56	32	55	1,550†
Khór Fakán -	W. end of village -	25	21	0	56	21	54	
" islet -	-	25	21	13	56	23	10	240
Bidíyah, islet -	-	25	25	35	56	22	35	200†
Jebel Keíwí or Kewá -	-	25	44	40	56	13	0	5,800
Límeh -	Mosque in village on beach -	25	56	38	56	25	50	
Jezíret Límeh -	Peak -	25	56	30	56	28	26	285
Sha'm, peak, highest mountain of Ruweís al Jebál. -	-	25	58	44	56	14	23	6,750
Jebel Seíbi -	-	26	12	40	56	26	0	3,000
Rás Serkán -	Extreme E. point -	26	5	10	56	28	52	
Rás Dalleh -	Little peak on extreme E. point. -	26	8	5	56	29	39	
Jezíret Umm al Fiyárin -	Highest part -	26	10	48	56	33	6	360
Rás Kabr Hindi -	Outer pap -	26	19	0	56	31	13	
Jezíret Musendom -	Centre peak of three, on highest part. -	26	21	54	56	31	55	875
" " -	N. point of island -	26	24	13	56	31	50	

* The longitudes depend upon Madras Observatory being 80° 4' 19" East of Greenwich. Those for the N.E. coast of Arabia, south of Maskat, are by Commander Sanders and Lieutenant A. Grieve, I.N., in 1846-9, but corrected to accord with the present longitude for Maskat. Those for the Persian Gulf are by Commander Constable and Lieutenant Stiffe, H.M.I.N., 1857-60.

† Approximate.

‡ Estimated.

Place.	Particular Spot.	Latitude, North.			Longitude, East.			Height in Feet.
		°	'	"	°	'	"	
Kuchul -	Centre of rocky islet -	26	23	40	56	32	12	100
Towakhul -	Highest part of islet -	26	23	59	56	30	3	460
Sellámeh wa Benát-ha,*	Highest part -	26	30	3	56	30	57	540
group of islets.	Great Quoin. Peak -	26	29	46	56	32	2	
	Gap island. Little Quoin. Highest part -	26	28	32	56	32	36	168
Mailí, peak -	-	26	19	12	56	26	39	1,894
Mishkan rocks -	-	26	23	33	56	25	7	12†
Rás Sheriteh -	Centre of perforated islet -	26	23	19	56	23	7	35†
Shem peak -	-	26	13	3	56	19	54	
Rás Sheikh Mas'úd -	Tomb in little cove at extreme N. point.	26	15	27	56	13	16	
Fine peak -	-	26	6	5	56	11	6	4,470
Rums -	Tower in village -	25	52	50	56	1	51	
Rás al Kheímeh -	S.W. square tower on beach.	25	47	42	55	56	44	
Jezíret al Hamra -	Large tree in fort -	25	42	49	55	47	23	
Umm al Koweín -	Sheikh's house in present town.	25	35	3	55	34	36	
" " -	Old mosque -	25	35	21	55	35	47	
'Ajmán -	High tower of fort -	25	24	49	55	27	9	
Al Fusht -	High fort -	25	22	57	55	24	33	
Shargeh -	High tower with flag-staff.	25	21	34	55	23	40	
Khán -	N. round tower -	25	19	58	55	21	56	
Debay -	Sheikh's flagstaff on high tower.	25	15	50	55	18	20	
Jebel 'Alí -	-	25	1	25	55	7	53	220
Rás Hasah -	Low stony point -	24	54	40	54	53	47	
Rás Hanyúrah -	West point -	24	43	36	54	38	54	
Abú Thabí -	Flagstaff on tower of fort.	24	29	2	54	21	42	
Jezíret Sír Abú Neír -	S.E. low sandy point -	25	12	44	54	14	48	
Jezíret Zirkúh -	S.E. sandy point -	24	51	25	53	5	28	
" " -	Highest peak -	24	52	56	53	4	52	540
Hálat Ambaras -	S. end -	24	27	15	53	23	1	
Bezm al Gharbí -	S.E. sandy point of island.	24	18	49	53	6	46	
Jezíret Sír Bení Yás -	E. sandy entrance point of the cove on S. side.	24	16	31	52	37	31	
" " -	East peak -	24	18	44	52	36	56	430
Thanní peak -	-	24	10	53	52	36	31	350
N. point of mainland opposite Sír Bení Yás.	-	24	12	27	52	37	53	
A sandy islet -	Centre -	24	14	34	52	41	14	
Another islet -	Centre -	24	18	48	52	43	14	
Jezíret Arzeneh -	S.E. low sandy point -	24	46	26	52	34	21	
" " -	Peak -	24	47	34	52	34	18	200
Jezíret Dás -	S.E. low sandy point -	25	8	23	52	53	29	
" " -	Peak -	25	9	33	52	52	56	145
Jezíret Karneín -	S.W. peak -	24	56	18	52	51	36	190
Jezíret Dalmeh -	S. sandy point -	24	27	33	52	19	27	
Hálat Masúmah -	Centre -	24	25	16	52	18	57	
Jezíret Yasát -	S. end of S. islet -	24	8	48	52	0	20	
Mahamaliyah -	Centre -	24	6	52	51	54	32	
Umm al Hatab -	Centre of S. side -	26	12	33	51	52	36	
Nehti -	S. end -	26	17	15	51	48	12	
Table Hill, over Rás Masheríb.	-	26	15	55	51	47	4	75
Rás Masheríb -	-	26	17	50	51	44	58	
Jezíret al Fazayah -	N. point -	26	19	30	51	39	45	

* i.e. Sellámeh and her daughters.

† Estimated.

‡ Approximate.

TABLE OF POSITIONS.

Place.	Particular Spot.	Latitude, North.			Longitude, East.			Height in Feet.
		°	'	"	°	'	"	
Frijdad, S. islet*	- - - - -	26	22	56	51	42	37	
" N. islet*	- - - - -	26	24	48	51	41	40	
Jezíret Guffoy -	Centre of N. end -	26	36	0	51	43	30	
" " 1 fathom shoal N. of.	- - - - -	26	40	0	51	42	0	
Rás Bágmez -	- - - - -	26	34	18	51	30	40	
Jebel 'Adeid, N.E. hill	- - - - -	26	36	47	51	26	37	189
Khór al 'Adeid -	Projecting sandy point, 2 miles outside N. entrance point of inlet, near anchorage.	24	39	14	51	26	12	
" " 1 fathom bank.	- - - - -	24	41	25	51	28	50	
Lasát, W. islet -	N. end - - - -	24	44	40	51	36	2	
" 1 fathom reef S. of.	- - - - -	24	42	0	51	35	20	
Hálat Dalmeh -	- - - - -	24	45	48	52	1	0	
Fusht al Aríf -	S.E. point - - -	24	54	0	51	41	20	
Jezíret Deíni -	S. end - - - -	24	56	46	52	24	42	
Jezíret Shirá'ao -	E. peak - - - -	25	1	48	52	14	44	45†
Jebel Wukra -	- - - - -	25	8	56	51	37	1	85
Al Bida' -	Fort flagstaff in town	25	17	28	51	31	37	
Rás Nesse -	N. tip - - - -	25	17	24	51	33	0	
Rás Bel Mashút -	- - - - -	25	16	30	51	36	48	
Jezíret as Sáflí -	E. end - - - -	25	20	42	51	35	25	
Jezíret Háluál -	Centre of S.E. side	25	40	12	52	25	15	
Rás Rekken -	N.W. point of island forming the cape.	26	10	55	51	13	14	
Bahreín -	Sheikh's house in Manámeh town.	26	13	50	50	34	59	
" Portugese fort	Highest part - -	26	13	56	50	31	45	
" Rúfa', fort -	West tower - -	26	7	2	50	34	18	
" Jebel Dúkhán	Peak - - - -	26	2	17	50	33	2	400*
Jebel Dharán -	- - - - -	26	19	13	50	8	14	495
Medthra, sugar loaf hill	- - - - -	26	21	7	50	5	30	416
Katíf -	Minaret in fort -	26	33	26	50	0	46	
Tarút -	Flagstaff in fort -	26	34	5	50	4	28	
Rás Tanúreh -	S. extreme - -	26	37	30	50	10	15	
Fusht Bú S'afch, 3 feet shoal.	- - - - -	26	57	25	50	22	53	
Rennie's Shoal, 16 feet shoal.	- - - - -	27	3	30	50	42	7	
Jezíret Farsí -	Beacon, N. point -	27	59	36	50	10	37	
" 'Arabí -	E. point - - -	27	46	40	50	11	13	
" Al Krán -	S.W. point - -	27	42	37	49	49	31	
" Hergúz -	Centre - - - -	27	56	6	49	41	28	
Rás Biddíah -	S. tip - - - -	27	25	16	49	20	22	
Rás Bildání -	S. end of shoals, in 3 fathoms.	27	57	45	49	13	27	
Jebel Thalúf -	- - - - -	28	1	57	48	41	46	40*
Jebel Amúdí -	- - - - -	28	10	7	48	37	16	105
Jezíret Muk'tah -	Centre of E. side -	28	11	0	48	39	51	
Jezíret Umm al Marádim, S.W. point.	- - - - -	28	40	40	48	40	13	
Jezíret Umm al Marádim, detached reef N. of; rock dry at half tide.	- - - - -	28	42	54	48	39	21	
Jezíret Garú -	Centre of S. side -	28	48	58	48	47	26	
" detached reef N. of.	- - - - -	28	50	17	48	46	50	
Jezíret Kubbr -	S.W. corner - -	29	4	10	48	30	21	
Sha'ibeh -	Fort - - - -	29	3	2	48	10	11	

* Approximate.

† Estimated.

Place.	Particular Spot.	Latitude, North.	Longitude, East.	Height in Feet.
		° ' "	° ' "	
Fantás - - -	Fort - - -	29 11 7	48 8 33	
Koweit - - -	N. end of town, beach -	29 22 56	47 59 51	
" hill fort, to S.E. of town.	- - -	29 16 55	48 3 28	184
Rás Ajúzeh - -	- - -	29 23 18	48 1 21	
Jeziret Korein -	Peak - - -	29 21 3	47 55 45	
Faü, S.W. bank Shat al'Arab, the first date grove on that bank from the sea, corner close to river.	- - -	29 58 55	48 29 0	
Rás Berkán - -	- - -	30 0 57	49 35 22	
Funnel hill - -	- - -	30 23 18	49 50 48	550
Kúh Bebahún - -	- - -	30 29 10	50 54 30	10,400
Shah bú'l Shah, tomb -	- - -	30 10 27	50 6 28	
Deilim - - -	Highest tower in fort -	30 3 14	50 9 45	
" table hill - -	- - -	29 57 58	50 17 36	165
Rás at Tanb - -	- - -	29 58 0	50 9 15	
Kúh i Bang - -	- - -	29 45 25	50 22 36	1,000
Sabz Pushán - -	Little tomb on hillock -	29 39 8	50 25 15	
Kal'at Haider - -	Centre of village -	29 37 53	50 27 49	
Genáweh - - -	Large banian tree on beach	29 34 38	50 30 38	
Jeziret Khárgú - -	N. point - - -	29 20 26	50 21 48	
Jeziret Kháreg - -	Fort flagstaff - - -	29 15 25	50 20 39	
Rás-as-Shat - -	S.W. point - - -	29 5 5	50 41 18	
Rú Hilleh - - -	Clump of trees - - -	29 13 45	50 43 27	
Abú-shehr - - -	Flagstaff, British Resi- dency.	28 59 7	50 50 3	
Halílah - - -	Square tower in village -	28 49 51	50 53 5	
Gísakhún bluff - -	- - -	29 19 47	51 20 47	5,350
Kúh Khormuj - -	Left peak - - -	28 43 20	51 27 47	6,500
Abú Reyyal (Asses Ears). - - -	S. peak - - -	28 28 59	51 11 41	2,500
Bárákí - - -	Tower in village - - -	28 29 0	51 6 51	
Rás al Khán - -	S.W. point - - -	28 1 55	51 18 40	
Jebel Dreng - -	W. peak - - -	28 5 20	51 36 38	3,270
Umm en Nakheila -	Two date trees in centre of island.	27 49 18	51 28 39	
Kongún - - -	Sheikh's house, W. end -	27 49 38	52 3 39	
Jebel Sirí 'Ayenát (Barn hill). - -	- - -	27 48 0	52 13 55	4,660
Tahrí - - -	Hill fort - - -	27 39 36	52 20 40	
Aslúh - - -	S. end of town - - -	27 28 4	52 37 4	
Sirí Yefál (Aslúh Notch)	- - -	27 33 37	52 37 40	4,870
Beid Khún - - -	S. extreme of point form- ing the sheltered an- chorage.	27 27 0	52 39 0	
Rás Náband - -	- - -	27 23 6	52 35 15	
" " single tree on table-land above.	- - -	27 21 15	52 37 56	
Náband - - -	Round tower in town -	27 23 46	52 37 48	
Sháhín Kúh - -	Highest bluff - - -	27 8 5	52 0 42	1,100*
Sháwú - - -	High tower over village -	27 4 22	52 8 50	
Bandar Bisátún -	W. point - - -	26 59 16	53 22 54	
Jeziret Sheikh Sho'aib	W. point - - -	26 50 25	53 9 38	
" " " "	Tree on highest part	26 48 13	53 15 19	120†
" " " "	Centre of E. end -	26 47 40	53 23 36	
" Shitwár - -	E. point - - -	26 47 20	53 25 42	
Nakhílúh, fall in hills over. - - -	- - -	26 59 28	53 35 3	
" " " "	Thick tower in fort -	26 53 19	53 29 39	
Jezzeh hummock - -	- - -	26 48 20	53 40 3	
Shah'Alamshoal (15 ft.)	- - -	26 25 20	52 30 15	
Cherúh - - -	Fort - - -	26 42 38	53 44 8	

* Approximate.

† Estimated.

Place.	Particular Spot.	Latitude, North.			Longitude, East.			Height in Feet.
		°	'	"	°	'	"	
Jeziret Hinderábí -	N.W. tower of fort -	26	41	9	53	37	31	
Sambarún shoal (6 fathoms), -	- - - -	26	34	28	53	44	30	
Jil'et al 'Abeid, hill fort -	- - - -	26	43	21	53	53	26	
Jerzeh -	Tower in village -	26	44	15	53	58	12	
Jeziret Kais, or Gaïs -	W. point -	26	32	44	53	54	25	
" " -	N.E. low sandy point -	26	33	37	54	1	49	
Jebel Taranjí -	Hummock on summit -	26	56	55	54	7	5	5,150
Táúneh -	Tower -	26	42	14	54	12	44	
Jebel Hamar -	- - - -	26	43	38	54	15	31	370
Chárek -	Sheikh's house, centre of town, -	26	43	34	54	16	50	
Husíneh -	S. square tower -	26	39	6	54	22	16	
Moghú -	Thickest round tower -	26	35	50	54	30	49	
Dúán -	Square tower -	26	35	1	54	34	36	
Rás Bostáneh -	S. point -	26	29	54	54	38	4	
Najwehal Furúr (15 ft.) -	- - - -	26	26	8	54	33	15	
Jeziret Furúr -	N. extreme -	26	18	51	54	31	2	
" " -	N. peak (highest on island) -	26	17	26	54	30	38	465
" " -	S. point -	26	14	53	54	31	23	
Jeziret Nábiyú Furúr -	Peak -	26	7	3	54	27	14	120
Jeziret Seri -	N.E. point -	25	55	54	54	33	12	
Jeziret Bú Músa -	Peak -	25	53	9	55	2	36	360
Jeziret Nábiyú Tumb -	Highest peak -	26	14	42	55	9	2	116
Jeziret Tumb -	Hummock on N.E. corner -	26	16	11	55	19	41	
Jebel Bostáneh -	Little peak like a tower -	26	32	58	54	41	43	1,750
Rás Shenás -	- - - -	26	29	42	54	47	56	
Rás Yesheh -	- - - -	26	30	58	54	51	13	
Lingeh -	Sheikh's house -	26	33	5	54	53	47	
" peak on mountains behind. -	- - - -	26	51	25	54	48	6	3,900
Kung -	Battery or fort in the sea -	26	35	7	54	56	43	
Flat-topped hill, in range to N. of Kung. -	- - - -	26	37	55	55	0	33	620
Grubb's Notch -	W. peak -	26	49	52	55	0	39	2,950
Basidúh -	Portuguese chapel -	26	39	12	55	16	15	
Eastern, highest hummock. -	Bush on top -	26	35	0	55	20	8	585
Dustakún point -	S.E. extreme -	26	32	6	55	18	12	
Koní hummock -	Bush on top -	26	36	18	55	24	50	
Kúh Kishkúh -	- - - -	26	39	32	55	33	22	1,300
Laft -	Highest hill fort -	26	53	49	55	46	9	214
Khamír -	Centre of fort -	26	56	51	55	35	46	
Béhil, or Púl -	Water tank -	26	58	10	55	45	12	
Peak behind Khamír -	- - - -	27	3	36	55	40	34	3,700
Jeziret Henjáin -	White ruined mosque -	26	40	49	55	53	53	
Kesm -	N.E. angle Portuguese fort -	26	57	27	56	17	5	
Tree on Quoin Hill -	- - - -	26	58	14	56	6	6	
Jeziret Lárek -	N. low sandy point -	26	53	8	56	21	42	
Bandar 'Abbás -	S.W. bastion, Sheikh's house. -	27	10	29	56	17	1	
Súrrú -	Village tower -	27	9	34	56	15	0	
Jebel Ginoh -	- - - -	27	25	0	56	9	27	7,690
Jeziret Hormuz -	S.E. bastion, Portuguese fort. -	27	5	51	56	27	35	
Jebel Shemíl -	Bluff -	27	36	30	56	40	10	8,500
Overhanging peak -	- - - -	27	5	10	57	15	30	
Khór Mínáb -	Bar -	27	5	50	56	46	25	
" " -	Custom house, at head -	27	6	47	56	52	50	
Mínáb fort -	Highest part -	27	9	20	57	5	0	
Grú, village about 1/2 from coast. -	- - - -	26	35	35	57	5	20	
Jebel Kurrye -	- - - -	26	10	40	57	17	11	1,910
Jebel Bis -	- - - -	26	12	16	57	33	0	4,600
Rás as Shír -	S.W. point -	26	0	41	57	12	12	
Quoin Hill, near do. -	- - - -	25	59	56	57	16	5	720

TABLE OF POSITIONS.

Place.	Particular Spot.	Latitude, North.	Longitude, East.	Height in Feet.
		° ' "	° ' "	
Rás al Kúh - -	Extreme S. point of creek	25 47 23	57 18 49	
Kúh í Mubárek - -	- - -	25 50 38	57 18 44	333
Rás Jashk - -	Tomb on point - -	25 38 3	57 46 13	
Jashk, fort - -	- - -	25 44 32	57 46 53	
„ Quoin Hill, near	- - -	25 50 0	57 43 3	1,630
Jebel Dughir - -	- - -	25 56 20	57 38 0	3,130
Bluff of hill to Eastward of Rás Jashk.	- - -	25 45 1	57 56 49	1,720
Mohammerah, N. en- trance point of Hafar Canal.*	- - -	30 25 40	48 11 13	
Basrah , N. entrance point of creek.	Custom-house flagstaff† -	30 32 0	47 51 23	
Ma'kil - -	British Vice-Consulate‡ -	30 34 0	47 48 53	

* Latitude by Lieut. Stiffe, 1857. Longitude (E. of Ma'kil by chronometer) by Commander Jones, I.N.

† By triangulation from Ma'kil, Lieutenant Collingwood, I.N., 1859.

‡ Latitude and longitude (from Abú-shehr by chronometer) by Commander Barker, I.N., 1854.

MEMORANDUM on the LONGITUDE of MASKAT (the Secondary Meridian for Places in this Table).

H. M. Surveying Schooner *Marie*, I.N., made two measurements, viz., from the sight station at Karáchi (battery on deep water point, 7" W. of the Light House on Minorah Point), as given beneath, to the small sandy bay on the West side of Maskat Cove (outside the forts), and back again.

Number of Days between the Observations.	Chronom. No. I.	II.	III.	IV.	V.	VI.	VII.	Arithmetical Mean.	Assumed Mean.
11 - -	m. s. 33 28'2	m. s. 33 30'0	m. s. 33 28'6	m. s. 33 35'5	m. s. 33 28'7	m. s. 33 24'4	m. s. 33 27'6	m. s. 33 28'6	m. s. 33 28'5
8 - -	33 33'5	33 33'7	33 40'0	33 30'6	33 34'3	33 34'2	33 32'6	33 33'1	33 33'5
Assumed Mean - - -									m. s. 33 31'0

Longitude, Karáchi (deep water point)	-	-	0	'	"	
Maskat, station in sandy bay, West	-	-	66	58	7	E.
Longitude, Maskat, station in sandy bay	-	-	58	35	22	E.

E. I. C. Steamer *Sesostis*, Capt. Carless, I.N., in 1846-7, was employed in measuring Meridian Distances between Bombay and certain points in the Persian Gulf. His measurement of Bombay to Maskat and back again is given below. His sight station at Bombay was the Old Saluting Battery, 1' 14" E. of Bombay Observatory.

Number of Days between the Observations.	Chron. No. I.	II.	III.	IV.	V.	VI.	Means.
7 - - -	14 12 20	11 42	13 27	13 49	13 22	13 27	14 13 16
8 - - -	14 12 55	14 25	15 9	14 5	14 9	15 0	14 14 17
General Mean - - -							14 13 44

Longitude of Bombay saluting battery	-	-	72	49	22	E.
Maskat, station in sandy bay, West	-	-	14	13	44	
Longitude, Maskat station	-	-	58	35	38	E.
Longitude of Minorah Light House	-	-	-	-	66	58 14 E.
Mean of two measurements by Capt. Pullen, R.N., H.M.S. <i>Cyclops</i> to a pinnacle rock on East side of Maskat Cove; Means of six chronometers	-	-	-	-	8	22 9
Pinnacle Rock is East of <i>Marie's</i> sight station	-	-	-	-	58	36 5 E.
Longitude of Maskat, station in sandy bay	-	-	-	-	0	0 27
Longitude, Maskat, sandy bay station	-	-	-	-	58	35 38 E.
Assumed Longitude for the chart of the Persian Gulf (1860)	-	-	-	-	58	35 30 E.

The Latitude of Maskat, station, by numerous observations, is - 23° 37' 35" N. (*Marie*.)
 The Longitude of the Light House on Minorah Point, Karáchi, 66° 58' 14" E., or 13° 16' 5" West of Madras Observatory, was supplied by Lieut. J. Tennant, Bengal Engineers, in charge of the Great Longitudinal Series (G.T.S.) at Karáchi in 1855.
 Madras Observatory is assumed to be in 80° 4' 19" East of Greenwich.

APPENDIX.

MEMORANDUM on the recent Surveying Operations in the PERSIAN GULF, in the brig *Euphrates*, 1857-58, and schooner *Marie*, 1858-60 ; with a brief review of the existing Charts. By Commander CONSTABLE, and Lieutenant STIFFE of Her Majesty's Indian Navy.

PART I.

THE instructions to the Commander of the Surveying Vessel were briefly comprised in the following paragraph of a Despatch, dated 24th June, 1857, from the Honourable the Court of Directors of the East India Company to the Government of Bombay :—

“ It is very important that as soon as the demands of the service will admit of it, one of the Indian Navy vessels should be employed in making a circuit of the Persian Gulf, for the purpose of determining correctly the latitudes and longitudes of the principal points.”

In accordance with these instructions, certain positions round the Gulf have been carefully determined, at such short distances apart as would admit of the interjacent coast-line being completed from the existing charts without material error, a vessel being thereby enabled to shape her course from one point to another with certainty. The new chart,* therefore, is a correct skeleton of the islands, and of the principal points and towns around the Gulf, with as much of the detail of coast line (in the vicinity of the positions fixed) correctly triangulated as the time admitted. The remainder of the coast line, &c., has been adapted from the old charts so as to complete the sheet for the use of the navigator. It is obvious that any error arising from this process will be limited to the space between the two adjacent well-determined points, and cannot have accumulated.

The latitudes and longitudes have been mostly astronomically determined by reflecting instruments of the best class. With the exception of a few observations, at shoals not dry, out of sight of land, they have been exclusively made with the artificial horizon.

* The Persian Gulf, General Chart, compiled by Constable and Stiffe. 1860. Two sheets. Scale, $m = 0.08$.

The latitudes have been determined by observations of the pole star, and by circum-meridional altitudes of stars, and, when the altitude was not too great, of the sun. Care has been taken to obviate any errors in the usual tables of refraction by observing stars on both sides of the zenith, and to compensate possible errors of construction by using at the most important stations three different instruments, viz., a reflecting circle, and two sextants. With the exception of some minor points, the observations at each station have been numerous and varied. The details of these observations (as well as of those for meridian distances) are given in a register, which was forwarded with the chart to Government.

The longitudes have been determined chronometrically by means of seven chronometers. The observations for time were altitudes of the sun all taken A.M., as near the same time and under the same circumstances as practicable; and also, by the same observer, with the same instrument, viz., a Troughton's reflecting circle, by which instrument errors arising from index error, inaccurate graduation, &c., are practically compensated. The greatest attention has been paid to the comparison of the chronometers. The general system pursued has been to start from some well-determined rating station, take observations at several, not too distant, circumjacent points, and return without delay to the starting-point to obtain a mean rate for the interval, which was not to exceed ten or twelve days, the rating stations being connected with the fundamental positions by at least two independent measurements.

The whole of the longitudes depend on Maskat, the longitude of which place has been determined from the measurements given in the memorandum following the Table of Positions. The two principal points within the Gulf on which the longitudes of all the rating stations depend are, first, Basídúh, which is trigonometrically connected with Kaïs, or Gaïs island station; secondly, Abú-shehr, with which Umm-en-Nakheilah is connected, also trigonometrically.

The longitude of Basídúh (and consequently also of Kaïs) is determined by two independent measurements between that place and Maskat in 1858-60, the result agreeing with the mean of the measurements by Captain Carless in the years 1846-47.

The whole of the Gulf southward of capes Nábend and Rekken depends entirely on Basídúh.

The longitude of Abú-shehr depends on two good measurements made to Kaïs, giving a result also agreeing with that of Captain Carless, between Basídúh and Abú-shehr.

The remainder of the Gulf, northward of Rekken and Nábend, has been fixed from Bú-shehr.

To prevent any accumulation of error in the longitudes on the Arab

side, measurements were made between Bahreïn and Hálúl island, and Bahreïn and Al Bidda' (on opposite sides of Rás Rekken), which were found to agree with the longitude of Bahreïn deduced from Abú-shehr, and that of Hálúl island and Al Bidda' fixed from Basídúh.

From the two principal points, Basídúh and Abú-shehr, a number of rating stations were determined, at convenient distances, on which the remaining minor points depend. These were Kesm, Debay, Sír Abú Neír, Zírkúh, Sheikh Sho'aíb, and Hálúl for the lower half; and the following, which were determined from Abú-shehr and Umm-en-Nakheilah, viz., Kháreg, Faü (Shat al 'Arab station), Kubbr, Farsí, and Bahreïn; the last named, as stated above, was also chronometrically connected with stations depending on Basídúh.

It was found possible, gradually, during the course of the chronometric observations between Kaïs, Kesm, and Líneh, to connect these and the intermediate stations, also trigonometrically, thereby checking the observations. Numerous minor points, and all the principal hills and landmarks, have been fixed trigonometrically from the astronomical positions.

The variation of the compass, which is westerly, and has much decreased since the former survey, has been everywhere carefully determined by azimuths observed on shore with a seven-inch Everest theodolite, and it is given at the head of each chapter.

No information being given on the old charts as to the heights of mountains, islands &c., much attention has been bestowed on their accurate determination, elevations being observed with the seven-inch theodolite, and heights above mean level of the sea; computed by the formula

$$dh = k \cdot \cotg : [\delta + (n - 0.5) C]$$

where dh = difference of level of stations given and required; k horizontal distance; δ zenith distance observed; n the co-efficient of refraction, and c the included arc.

The terrestrial refraction has been assumed at 0.08 of the contained arc.

During the vessel's progress from one station to another, a great many soundings were taken to fill up gaps, and also to test those exhibited on the old charts. The nature of the bottom has been everywhere noted, as it has been but in few instances recorded by former surveyors. It was not, however, considered compatible with the instructions to sail about solely for this purpose, or even to sound where the ship's progress would have been so much delayed, by rounding to, &c., as to vitiate chronometric measurements.

PART II.

The imperfections of the existing charts, a list of which is given at page 250, consist both of absolute errors, which are chiefly in the longitude (with the remarkable exception of the island of Nábiyú-furúr (Nobflure),* and of incompleteness. The latitudes are in most instances correct, the differences exhibited by our observations not much exceeding one mile, excepting, however, the island, Nábiyú-furúr alluded to above, which has been put down $4\frac{1}{4}$ miles too far north, owing apparently to some mistake.

The errors in the longitude are often considerable in amount, and do not appear to have any general connexion with each other; places at no great distance apart, differing much as regards the amount their longitude is in error, some being too far east, and some too far west. In instituting the following comparison, the longitude of Abú-shehr, being nearly correct with regard to the longitude at present allowed for Bombay, is assumed as the standard:—

		°	'	"
Long. of Abú-shehr by old Chart	-	50	51	30 E.
Ditto by the late observations	-	50	50	3 E.
Difference	-	0	1	27

The Persian coast without the Gulf, and as far as the towns of Kesm and Bandar 'Abbás are nearly correct with reference to Abú-shehr, while Basídúh, Lingeh, and the adjacent islands are from four to six miles too far east.

Cape Bostáneh, only sixteen miles from Lingeh, is again nearly right. The islands Furúr (Polior), Kaïs (Guase or Kenn), and Sheikh Sho'aib (Shaik Shaab), are also but little in error. The coast from Ná bend to Berdistán and the Asses Ears, is from two to four miles too far east. The island of Kháreg (Karrack) is two or three miles too far west, while the neighbouring coast is two or three miles too far east. The mouth of the Basrah River is five miles too far west of Abú-shehr, while the town of Koweit (Quade or Grane), distant about forty miles, is not far from correct.

The coast for a distance of eighty miles south of Koweit, and the three islets lying off it, are much in error, being too far to the westward from four to eight miles. At Musulimíyah (Dooat Musoolimy) the coast is again nearly correct, also the islands Al Krán (El Kraing) and Hergúz (Hargose).

* To facilitate comparison, the names of places as spelt on the old chart are given in parentheses where they differ much from the now adopted names.

The outer islands of this group, 'Arabí and Farsí (Keyn or Araby and Zazarine or Farsey) are too far west by two miles.

Bahreïn island, Rás Rekken, and the whole of the Gatr, or Katr, coast, with the islands of Deíní (Daeny) and Hálúl (Hawlool), are relatively right with Abú-shehr, although Katíf and Rás Tanúreh just above Bahreïn are two miles too far east.

A very erroneous portion now follows; the islands called Yasát. (Yassart) being more than three miles too far west, whilst Sír Bení Yás, Arzeneh, and Dalmeh, are six to seven miles too far east. At this part were found the greatest errors in short distances, there being seven to eight miles error between Deíní and two islands which are in sight from it, viz., Arzeneh and Dalmeh, (this error corroborated by true bearings); and between Yasát and Dalmeh, distant only twenty miles, there is no less than ten miles of error. The rest of the islands and coast as far as Abú Thabí (Abothubbee) are from five to seven and nine miles too far east.

From Abú Thabí this easterly error decreases gradually to two or three miles at the Quoins, and from thence increases to five miles in the neighbourhood of Maskat.

The soundings on the Persian coast outside the Gulf, and as far as Hormuz, are very deficient, there being merely a line of soundings taken close along the shore by the surveying ship *Benares*, Commander Brucks, I.N., in 1829, while sailing along it, which conveys no idea of the great depth of water which is here found close in to the shore. This defect has been partially remedied by soundings taken by the late Commander Geieve, I.N., between Rás Jáshk and Rás al Kúh, and by some soundings taken during the late expedition.

Lieutenant Grieve, in the surveying brig *Palinurus*, in April 1849, whilst in search of a shoal reported by Lieutenant Jones, I.N., commanding the *Royal Tiger* in 1839, did not find either that or the one known as Kúh i Mubárek shoal. These two shoals, the assigned position of which is not widely different, are probably one and the same, and the natives agree in stating that a shoal exists. Being very small it would require a minute examination to discover, and it is perhaps closer to the coast than represented. The shore being very low possibly deceived those who merely estimated its distance from the shoal. Caution should at any rate be exercised in standing close into the coast between Rás Jáshk and Rás al Kúh.

The *Elphinstone*, Commodore Carless, got into shoal water on the flat extending of Rás-as-Shír (Ras Aysheer). It was the Commodore's opinion that the bank extended seven or eight miles from the coast instead of two or three miles, as laid down on the chart.* But from the partial

* Letter from Commodore Carless to Commander-in-Chief, I.N., dated 25th June 1848.

examination made of it, it does not appear to extend more than three miles, and probably Commodore Carless was misled as to his distance off shore by the lowness of the coast.

The Mínb or Minnow river, so called on the old chart, is a salt water creek, which ends at the place marked *Custom House*. There is a Min-áb river, a stream of fresh water running past the town, but which appears to be absorbed in irrigation, and not to reach the sea.

Jezíret at Tawíláh (Island of Kishm) is four miles too short on the chart. The chart of the strait between it and the main is not sufficiently accurate to enable a ship to go through without a pilot.

The Island of Lárak is placed two miles too far east with reference to Kesm and Hormuz, places close to it.

The soundings on the south coast of Jezíret at Tawíláh and Lárak do not convey an idea of the great depth of water which is found close to the shore, and to the edge of the Basídúh bank or flat.

The shoal off the south-west corner of Jezíret Tumb (Great Tomb) surveyed by Commander Haines, I.N., in the *Palinurus* in 1835 has been inserted in the chart corrected to 1857 as a doubtful one.*

The coast between Lingeh and Cape Bostáneh was found so very incorrect that it was resurveyed. There is four miles error in the distance, and the soundings are very incorrect, there being deep water close to all the points instead of its shoaling gradually as shown by the charts.

There is evidently a bank to the southward of Jezíret Furúr, the position of which is not yet determined. On 22nd May 1822, the *Ternate*, Lieutenant Grubb, I.N., commanding, when sailing between Furúr and Nábiyú Furúr, bound to Basídúh, had six fathoms hard sand, Furúr N. 8° E. distant about two miles. The *Ajdaha*, Lieutenant Selby, I.N., commanding, from Maskat to Abú-shehr, January 20th, 1855, passing to the southward of Furúr, distant about 1½ mile, saw what appeared to be a shoal, with three or five fathoms on it, and altered course in consequence. Soundings were taken in the assigned position by the *Euphrates* and *Marie* in search of the bank, without finding less than forty fathoms. There cannot be much doubt of the existence of the bank, but it is probably farther from Furúr than reported.

From Cherúh to Shíwú the coast line is very incorrect, the land west of Bandar Basátín projecting two miles too much. The cliffs at Rás Náband are greatly exaggerated. In the general chart (corrected to 1857) a second shoal has been inserted in Náband bay without authority. The Berdistan bank appears to be nearly correctly delineated with regard to the adjacent land. There is a channel at high water for large boats to the northward of Umm-en-Nakheilah.

The point of land called on the old chart Rohilla projects considerably

* The *Clive*, sloop-of-war, struck on this shoal in 1835.

too much, and the coast from thence round to Rás Berkán is incorrectly delineated. The water off that coast up as far as Deïlim is deeper than represented by the chart, or in other words, the soundings are laid down too far off shore.

The survey across the head of the Gulf is not trustworthy. There is much deeper water in the Khors or channels than represented, and the four fathom rocky bank off the mouth of the Basrah river is not laid down. There is a great want of soundings off the entrance of the river, indeed the whole upper portion of the Gulf as far as the islet of Hergúz is almost unsounded, except close to the coast.

The separate chart of the entrances to the rivers, &c., is very imperfect. There is no latitude or longitude of any point given, no mention of the time of high water, or rise and fall of tide, and the meridian line marked as magnetic is the true meridian, as may be seen on reference to the general sheet; it is also not sufficiently extensive to be of practical use.

Koweit harbour (Quade or Grane harbour) seems to have been carefully examined, but there appears to be a mistake in the channel leading to the inner anchorage where the native craft go.

The coast between Koweit (Quade) and Rás al Ghár (130 miles) is both incorrect in direction and imperfectly examined. Being an unfrequented and almost unapproachable shore, it is of little importance. The range of hills between Rás Jílah and Rás Tanúreh (Tannora) has no existence, there being but a few rocky hillocks. The channel inside the Bildání (Baldanha) shoals has not been examined. A good deal of ground remains unsurveyed between the island Al Krán and the reef Bú S'afeh (Boosaa Saah) it has been merely marked off as "unsafe to navigate without a pilot, and only in the day time with one," about which latter remark there cannot be any doubt.

The great bay between Al Katíf and Rás Rekken is only partially explored. It remains a question, whether or not there is a passage round Bahreïn island for a small ship. The native reports are very conflicting, some asserting that there is no channel for a ship, while others say that there is, although intricate, and that there is in some part between Bahreïn island and Zukhnúníyeh (Zucnone Is.) thirty fathoms water.

There is a good channel inside the great shoal called Fusht al Yárem (Yarron) which is not shown. Lieutenant Whish, I.N., Commanding the *Mahi*, made a partial survey of it in 1860.

The two land marks called Sugar Loaf and Table Mount are misplaced on the general chart, though correctly shown on the larger scale sheet.

The coast from Rás Rekken to the islands called Lassart, and the channel inside the reefs have been tolerably well examined, except just above Khór al 'Adeïd, (Core Alladied) where two surveys join. Here a gap has been left, in which the *Marie* discovered two rocky shoals by

striking on them. The outer edge of the line of reefs which lie off this shore has never been properly examined. The whole of this part of the sea, however, is full of shoals, and so little frequented, except by fishing boats, that the want of a correct survey is little felt.

The coast from Yasát to Abú Thabí (Abothubbee) is fronted by extensive shoals, it is a low desert, seldom visited, even by Arabs. The sea front of the reefs has been only approximately delineated.

From Abú Thabí to Debay the chart is very bad. The coast is very low, and there is an extensive shoal off Rás Hanyúra (Rás Ellora) not shown on the chart. From Debay to the Quoins, and round as far as Khor Fakán (Khorefacawn), the surveys are more satisfactory, but south of Límeh (Lima) soundings have only been taken close to the shore.

The chart of the Bátinah (*i. e.* level) coast was constructed from a running survey, made in 1828, by Commander Brucks, I.N., in the *Discovery*. As a fortnight only was devoted to the survey of 170 miles of coast it is very imperfect. The few soundings shown, are placed too far from the shore. It is a deep coast, with only a narrow bank of soundings, which this chart would not lead one to suppose.

The charts of the Gulf give no information regarding the tides, which are strong near the entrance, and are felt all over the Gulf, materially affecting a ship's course in short periods, although the effect in twenty hours would be compensated. As might be expected, the laws by which the tides are regulated are very complicated, and at present very little understood.

On the general chart the whole of the coast is very indifferently reduced from the large scale, all the points and bays being much exaggerated, and the shape of the islands disregarded. The whole of the mountains are laid down at random, and the landmarks either omitted or incorrectly placed. The trees so plentifully delineated on the large scale sheet of the Persian coast from one end to the other do not exist.

There is a great want of system in the outlining and mode of delineating the shoals. There are many misspellings in the names of places on the charts. There is a want of discrimination also in the style of printing names of places, insignificant villages, as Taurie, &c., being engraved in large letters, while important towns, as Lingar, are inserted in the smallest character.

Dated in 1860.

LIST of the CHARTS of the PERSIAN GULF, from the SURVEY made by the OFFICERS of the INDIAN NAVY, by order of the E.I.C., and originally published by JAMES HORSBURGH, Hydrographer to the E.I.C., between the Years 1826 and 1832, with Additions to 1857, by JOHN WALKER, Geographer to the E.I.C.

	Scale. Inches.
Coast of Arabia from the Quoins to Core Abdallah, 5 sheets, <i>Maughan, Guy, Brucks, Cogan, and Rogers, 1821-1825</i> -	$d = 13.2$
Entrance to the Rivers at the Head of the Persian Gulf, <i>Brucks and Haines, 1827</i> - - - - -	$m = 1.0$
Coast of Persia from Rás Tuloop to Bushire, <i>Brucks and Cogan, 1826</i> - - - - -	$d = 13.6$
Coast of Persia from Bushire to Basadore, <i>Brucks and Haines, 1828</i> -	$d = 13.3$
Entrance to the Gulf of Persia and Coast of Arabia from Rás Goberhindiee to Muscat, 2 sheets. The second sheet is entitled Battinah or Burka Coast, <i>Brucks and Haines, 1828</i> - -	$d = 13.2$
Coast of Persia from Kooe Mubarrack to Krotchey, with Plans, <i>Brucks and Haines, 1829</i> - - - - -	$d = 4.4$
* Gulf of Persia, General Chart, compiled from the above, in 2 sheets, 1830 - - - - -	$d = 4.5$

HARBOURS, &c.

* Muscat and Muttra, <i>Brucks and Haines, 1828</i> - - -	$m = 8.0$
Coast of Arabia from Rás Goberhindiee to Rás Soaote, <i>Brucks and Haines, 1828</i> - - - - -	$m = 1.0$
Bahreïn Island and Harbour, <i>Brucks and Rogers, 1825</i> - -	$m = 0.5$
Anchorage off the Town of El Katif, <i>Brucks and Rogers, 1825</i> -	$m = 0.5$
Grane or Quade Harbour, <i>Guy and Brucks, 1825</i> - -	$m = 0.5$
* Bushire Roads, <i>Brucks and Cogan, 1826</i> - - -	$m = 2.0$
Clarence Straits, from Basadore to within 7 miles of Kishm, 2 sheets, <i>Brucks and Haines, 1828</i> - - - - -	$m = 1.0$

Those marked * have been cancelled, as there are such charts now from the surveys of Constable and Stiffe.

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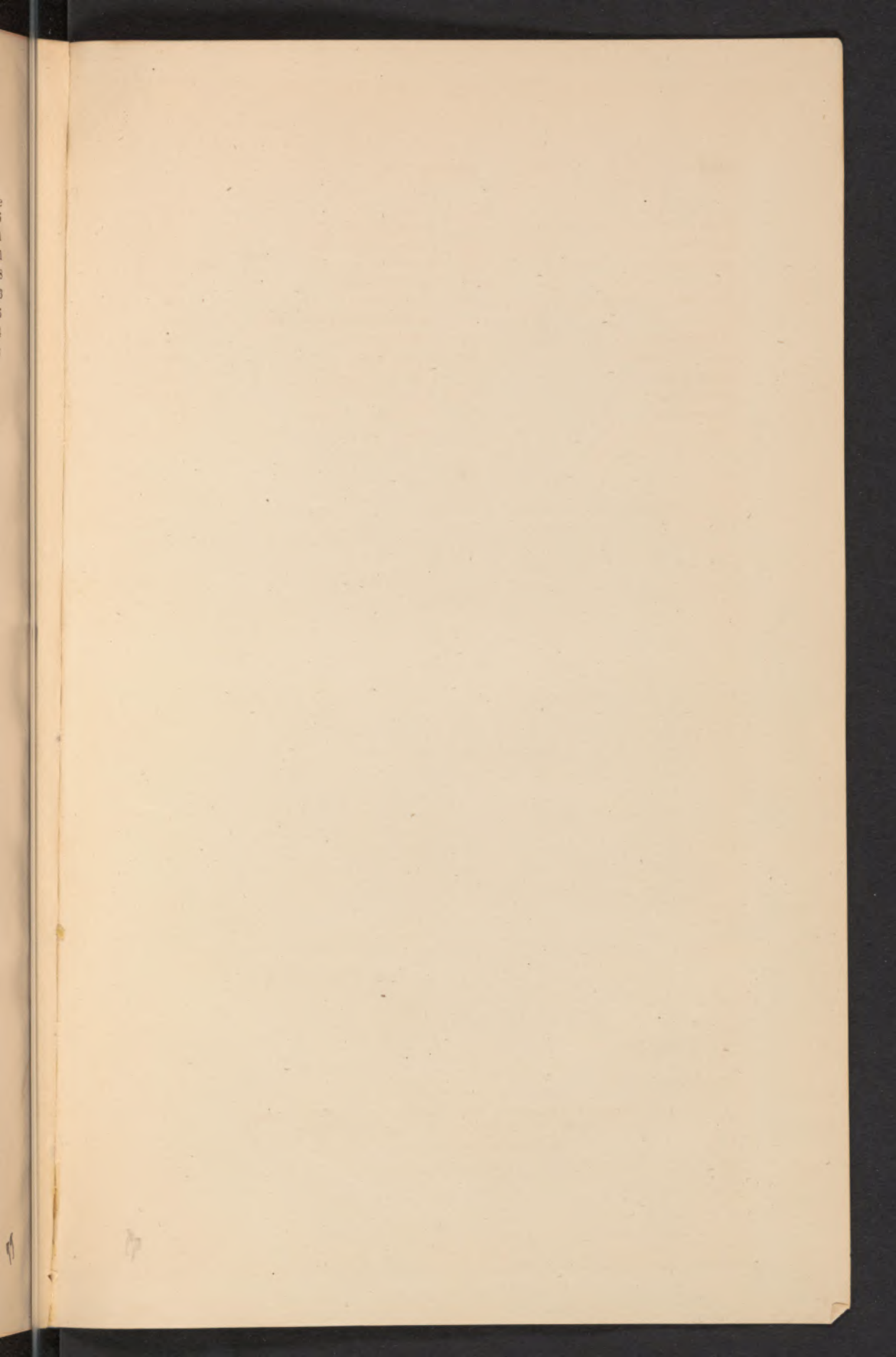
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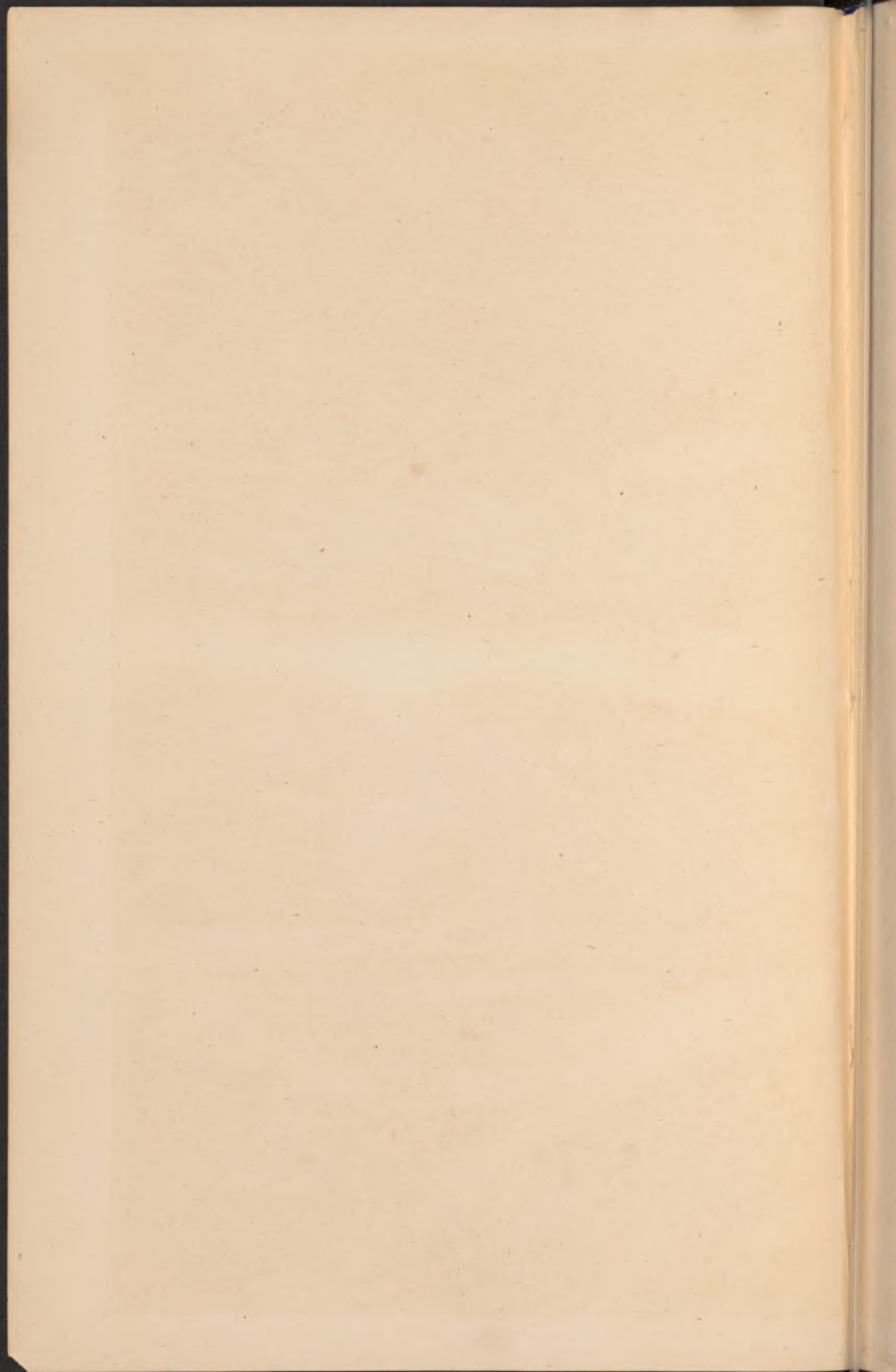
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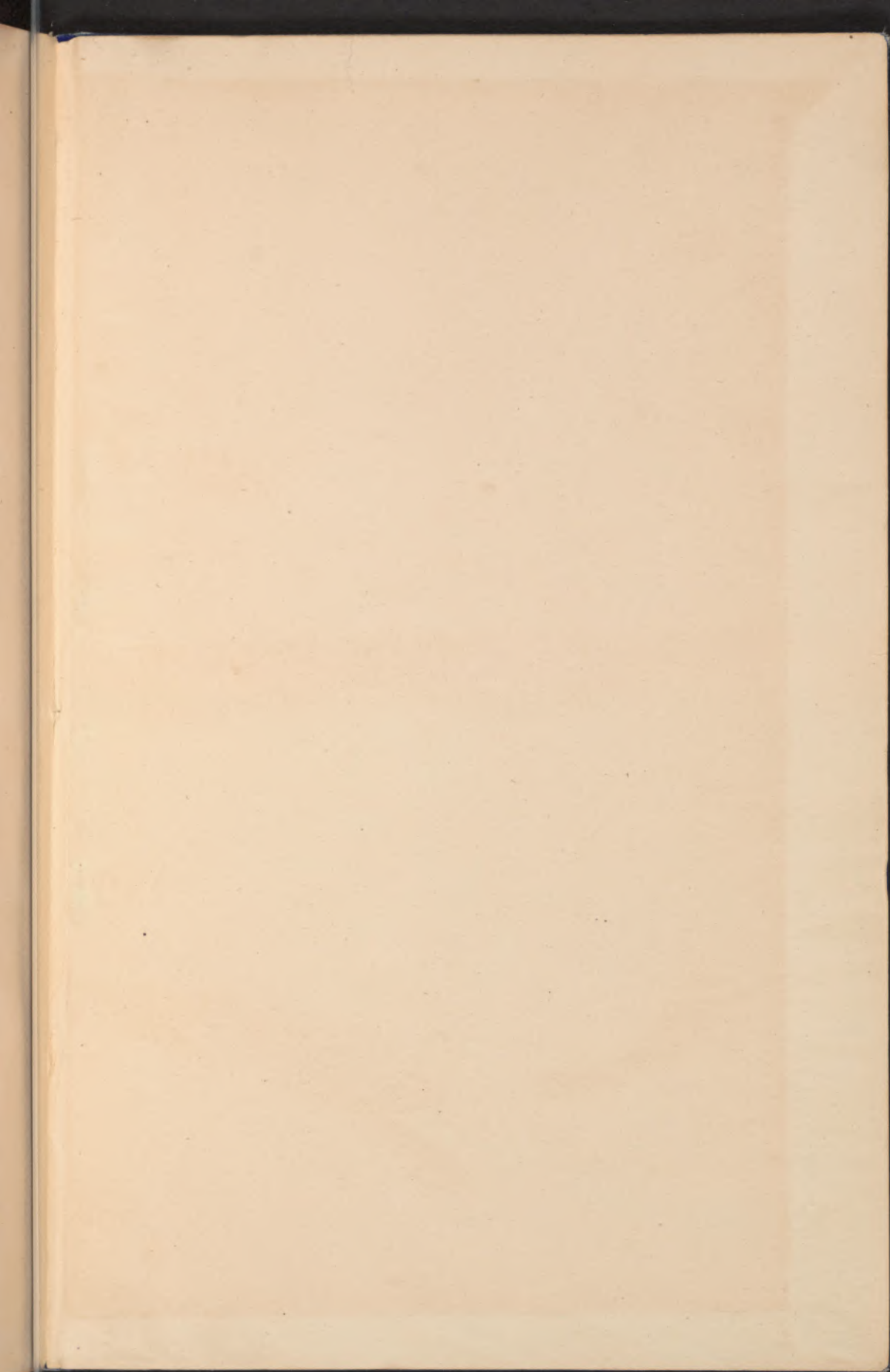
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